A QUASI EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF INFORMATION EDUCATION AND COMMUNICATION PACKAGE ON KNOWLEDGE AND PRACTICE REGARDING SELF CARE AMONG DIABETES MELLITUS PATIENTS ON INSULIN THERAPY IN SELECTED HOSPITAL AT TRICHY.

BY

S.DEVI

A DISSERTATION SUBMITTED TO THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY, CHENNAI IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING.

APRIL 2015

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CERTIFICATE

Certified that this is the bonafide work of MS**. S.DEVI,** Dr. G. Sakunthala College of Nursing, Trichy, submitted in partial fulfillment of the requirement for the degree of Master of Science in Nursing from the Dr. M.G.R. Medical University, Chennai.

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TO WHOM SO EVER IT MAY CONCERN

This is to certify that the Ethical committee of Dr. G. Sakunthala College of Nursing has discussed with its members about the topic "A quasi experimental study to evaluate the effectiveness of information education and communication package on knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in selected hospital at Trichy. During the year of 2014-2015opted by **MS. S.DEVI** and its implication on study subjects for his thesis for M.Sc. Nursing program and the committee passed clearance for the same topic for his to pursue.

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ETHICAL COMMITTEE

ACKNOWLEDGEMENT

If anything is worth doing, do it with all your hearts.

(Buddha)

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ABSTRACT

A quasi experimental study to evaluate the effectiveness of information education and communication package on knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in selected hospital at Trichy.

OBJECTIVES

1. To assess the existing level of knowledge and practice regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.
2. To assess the effectiveness of information education and communication package on knowledge and practice regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group.
3. To correlate the posttest level of knowledge and practice regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.
4. To determine the association between selected demographic variables and pretest level of knowledge and also selected demographic variables and posttest level of knowledge regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.
5. To determine the association between selected demographic variables and pretest level of practice and also selected demographic variables and posttest level of practice regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.

Conceptual frame work	:	Based on general system theory
Research design	:	"Quasi-experimental design" E O1 X O2 C O1 O2
Population	:	Diabetes mellitus patients on insulin therapy
Sample size	:	60 samples.
Sampling	:	Non- Probability Convenience Sampling.
Setting	:	G.V.N Hospital and DR.G.Viswanathan specialty hospital, Trichy.
Tools	:	self-administer questionnaire and observation check list

DATA COLLECTION

A quasi-experimental design was used. Pretest knowledge and practice was assessed in experimental group and control group. Nursing intervention (Information Education and Communication) was given to experimental group. After 1 week, posttest Knowledge and practice was assessed using the same tools.

DATA ANALYSIS

1. Percentage, mean, standard deviation and chi-square were used to test the association between demographic variables and the post test scores between experimental group and control group.

2. Paired ‘t’-test was used to compare the knowledge and practice pretest and post test score between experimental group and control group.
3. Independent‘t’ test was used to assess the posttest scores of knowledge and practice between control group and experimental group.
4. Correlation between the posttest knowledge and practice in experimental group and control group.

MAJOR FINDINGS

1. The mean posttest level of knowledge was higher than the mean pretest level of knowledge in experimental group.
2. The mean posttest level of practice was higher than the mean pretest level of practice in experimental group.
3. There were no significant association between selected demographic variables and their pretest level of knowledge in both experimental and control group.
4. There was significant association between selected demographic variables such as duration of diabetes mellitus and duration of taking insulin and posttest level of knowledge in control group.
5. There was significant association between selected demographic variables such as educational status and occupation and pretest level of practice scores in control group.
6. There was significant association between selected demographic variables such as occupation and posttest level of practice score in experimental group.

CONCLUSION

The knowledge and practice of regarding self-care among diabetes mellitus patients on insulin therapy was inadequate knowledge and unfavorable practice during pretest. The study showed that Information, Education and Communication was effective an improving knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy. So the result reveals that there is a positive relationship between knowledge and practice.

CHAPTER I

INTRODUCTION

"Health is a state of complete physical, mental and social well - being and merely an absence of disease or infirmity"

Health requires the promotion of healthy lifestyle. A considerable body of evidence has accumulated which indicates that there is an association between health and life style of individuals. Many current-day health problems especially in the developed countries (e.g. diabetes mellitus, coronary heart disease, obesity, lung cancer, drug addiction) are associated with lifestyle changes. In developing countries such as India where traditional lifestyles still persist, risk of illness and death are connected with lack of sanitation, poor nutrition, personal hygiene, elementary human habits, customs and cultural patterns.

Non communicable diseases include cardiovascular, renal, nervous and mental diseases, musculoskeletal condition such as arthritis and allied diseases, chronic non- specific respiratory diseases, permanent results of accidents, blindness, cancer, diabetes, obesity and various other metabolic and degenerative diseases and chronic results of communicable diseases.

Diabetes mellitus is a group of metabolic disease characterized by increased level of glucose in the body (hyperglycemia) resulting from defect in insulin secretion, insulin action, or both.

International Diabetes Federation 2014, states that the prevalence of diabetes was 8.3% around the world and 387 million people living with diabetes. In India, an estimated 62 million peoples have diabetes which is more than 7.1% of adult population. The prevalence in urban areas was

about 9% and 3% in rural area. It is further estimated that 35%-40% already shows some complication of the disease at the time of diagnosis. Nearly 1 million Indians die due to diabetes every year.

Causes of diabetes include single or in combination, such as genetic, familial history, auto immune disorder, viral or bacterial infection, ethnicity, and environmental factors (e.g. stress).

Although the American Diabetes Association recognizes different classification of the disease, most of the types are rarely encountered in routine nursing practice. The most common type of diabetes is classified as type 1, type 2 diabetes mellitus. Other classifications of diabetes commonly seen in clinical practice are gestational diabetes, pre diabetes and secondary diabetes.

The classic symptoms are polyuria, polydipsia and polyphagia. Polydipsia and polyuria are produced by the osmotic effect of glucose. Polyphagia is a consequence of cellular malnourishment when insulin deficiency prevents utilization of glucose for energy. Weight loss, Weakness and fatigue may also be experienced as body cells have lack of needed energy from glucose. Some of the more common manifestation associated with type 2 diabetes include fatigue, recurrent infection, recurrent vaginal yeast or monilia infection, prolonged wound healing and visual changes.

Diabetes must be confirmed by any of the three methods such as Fasting plasma glucose, Random plasma glucose measurement and Two hour OGTT (Oral Glucose Tolerance Test)level. Fasting plasma glucose level above > 126 mg/dl (7.0 mmol/lit). Fasting is defines as no caloric intake for at least 8 hours. Random plasma glucose measurement >200 mg/dl (11.1 mmol/lit) with manifestations such as polyuria, polydipsia and unexplained weight loss. Two hour OGTT level > 200 mg/dl (11.1mmol/lit), using a glucose

load of 75g. IGT and impaired fasting glucose represent an immediate stage between normal glucose homeostasis and diabetes. Measurement of glycosylated hemoglobin, also known as the Hemoglobin A1C test, is useful in determining glycemic levels over the time period of 8-12 weeks.

The goals of diabetes management are to manage the symptoms, promote wellbeing, prevent acute complication of hyperglycemia and prevent or delay the onset and progression of long term complications. Diabetes is a chronic disease that requires daily decision about food intake, blood glucose testing, medication and exercise. Nutritional therapy, drug therapy, exercise and self-monitoring of blood glucose are the tools used in the management of diabetes. For some people with type 2 diabetes, a regimen of proper nutrition, regular physical activity and maintenance of desirable of body weight will be sufficient to attain an optimal level of blood glucose control.

Complications associated with both types of diabetes are classified as acute or chronic. Acute complication occurs from short term balances in blood glucose an include hypoglycemia, diabetic ketoacidosis, Hyperosmolar nonketotic coma. Chronic complication generally occurs 10-15 years after the onset of diabetes mellitus. Those include macro vascular disease (affects coronary, peripheral vascular and cerebral vascular circulation), micro vascular disease (retinopathy, nephropathy), and neuropathic disease (affects sensory motor and autonomic nerves contributes to such problem as impotence and foot ulcer).

Self-management and psychological interventions have shown high positive impact on glycemic control. The prognosis of diabetes with self-management and psychological interventions is relatively high when compared to the patients lacking with self-care.

Diabetes education is important but it must be transferred to action or self-care activities to fully benefit the patient. Self-care activities refer to behavior such as following of diet plan, avoiding high fat foods, increased exercise, self-glucose monitoring, foot care and management of hypoglycemic episode. Decreasing the patient's Glycosylated hemoglobin level may be the ultimate goal of diabetes self-management but it cannot be the only objective in the care of a patient. Changes in self-care activities should also be evaluated for progress toward behavioral change.

Diet plays an important role in the management of diabetes, diet works wonder for controlling diabetes effectively. The diabetic diet may be used alone or else in combination with insulin doses or with oral hypoglycemic drugs. Main objective of diabetic diet is to maintain ideal body weight, by providing adequate nutrition along with normal blood sugar levels in blood. Diabetic diet for diabetes simply a balanced healthy diet which is vital for diabetic treatment. Several factors are taken into consideration while planning diabetic diet. The diet plan for diabetic is based on height, weight, age, sex, physical activity and nature of diabetes. While planning diabetic diet one should adhere to certain important factors, like maintenance of normal weight choose right types of carbohydrates, increase fibring diet, include antioxidants diet, fixed meal timings and small meals.

Regular consistent exercise is considered an essential part of diabetes and pre-diabetes management. Exercise increases insulin receptor site in the tissue and can have a direct effect on lowering the blood glucose level. It also contributes to weight loss, which also decrease insulin resistance. The therapeutic benefits of regular physical activity may result in a decreased need for diabetes medicines in order to reach target blood glucose levels. Regular exercise may also help reduce triglyceride and LDL cholesterol level, increase HDL, reduce blood pressure and improve circulation.

Exogenous (injected) insulin is needed when a patient has inadequate insulin to meet specific metabolic needs. People with type 1 diabetes require exogenous insulin to survive and may need up to four to five injection per day to adequately control the blood glucose level. People with type 2 diabetes, who are usually control with diet, exercise, may require exogenous insulin temporarily during period of severe stress such as illness or surgery.

Teaching proper foot care is a nursing intervention that can prevent costing and painful complications that result in disability. Preventive foot care begins with careful daily assessment of the feet. The feet must be inspected on a daily basis for any redness, blisters, fissures, calluses, ulcerations, changes in skin temperature, or development of foot deformities. For patients with visual impairment or decreased joint mobility (especially the elderly) use of a mirror to inspect the bottoms of feet or help of a family member in foot inspection may be necessary. The interior surface of shoes should also be inspected for any rough spots or foreign objects. Patients with pressure areas such as calluses, or thick toe nails should consult with podiatrist routinely for treatment of calluses and trimming of nails.

NEED FOR THE STUDY

The World Health Organization has projected that the global prevalence of type 2 diabetes mellitus will more than double from 135 million in 1995 and 300 million by the year of 2025. Recently, very disturbing estimates have been reported by international diabetes federation and WHO that in the year 2008, at least 177 million people are having diabetes mellitus worldwide. This indicates that a previous estimate of 225 million by 2010 is an underestimates. Currently India got the largest number of diabetic and is being called diabetic capital of the world.

India has been designated as the “Global capital of Diabetes” having the highest 35 million diabetic patient. Worldwide 3.2 million deaths are attributed to diabetes every year and at least one in ten deaths among adults between 35 to 64 years old is attributed or diabetes. In India, there are nearly 35 million diabetic patients and the number would go up to 80 million by 2030. If unchecked the diabetes can cause disease related to kidney, heart and nerve system at later stage.

India has nearly 35 million diabetic subjects today, which is briefly contributed by the urban population. The scenario is changing rapidly due to socio-economic transition occurring in the rural area also. Availability of improved modes of transport, and less strenuously as in the vicinity have resulted in decreased physical activities. Better economic conditions have produced changes in diet habits. The conditions are more favorable for expression of diabetes in the population, which already has a racial and genetic susceptibility of the disease. Recent epidemiological data show that the situations are similar throughout the country. The conversion to diabetes is enhanced by the low thresholds for the risk factor, such as age, body mass index and upper body adiposity. Indians have a genetic phenotype characterized by low body mass index, but with higher upper body adiposity, High body fat percentage and high level of insulin resistance. With a high genetic predisposition and the high susceptibity to the environmental insults, the Indian population faces a high risk for diabetes and its associated complications.

As per International Diabetes Federation, Global Projections for people with diabetes (between the age group of 27 – 79 yrs. old), is 246 million in 2007 and 380 million in 2025 which is 55% increase in diabetes population. India, in 2007 has 46.5 million people with diabetes which will increase by 73% in 2025 up to 80.3 million. The total number of diabetes people with diabetes is projected to rise from 171 million in 2000 to 366

million in 2030. The prevalence of diabetes is higher in men than women, but there are more women with diabetes than men. The urban population of the developing countries is projected to double between 2000 and 2030. The estimated number of people with diabetes in India in 2000 is 31 million which will increase to 79 million in 2030. Therefore a concerted global initiative is required to address the diabetic epidemic. The number of people with diabetes is increasing due to the population growth, ageing and urbanization and increasing prevalence of obesity and physical inactivity.

Diabetes mellitus is a global problem with devastating human, social and economic impact. Diabetes mellitus is the 4th leading cause of death in most developed countries. In 2005, diabetes affects 246 million people worldwide and is expected to affect 380 million by 2025 (a prevalence rate of about 5.4%). Today more than 250 million people worldwide are living with diabetes and each year another 7 million people develop diabetes.

The prevalence of diabetes is rapidly rising all over the globe at an alarming rate over the past 30 years. The status of diabetes has been changed from being considered as a mild disorder of the elderly to one of the major cause of morbidity and mortality affecting the youth and middle aged people. It is important to note the rise is prevalence is seen in all six inhabited continents of the globe.

The global prevalence of diabetes mellitus for all age-groups worldwide was estimated to be 2.8% in 2000 and 4.4% in 2030. The total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. The prevalence of diabetes is higher in men than women, but there are more women with diabetes than men. The most important demographic changes in diabetes prevalence across the world appear to be increase in the proportion of people. The findings of the studies indicate that the “diabetes epidemic” will continue even if levels of obesity remain constant.

Diabetes is a major cause of disability through its complications (e.g., blindness, kidney failure, coronary thrombosis, gangrene of the lower extremities etc.). And it is also one of the major causes of premature illness and death worldwide. The number of deaths attributable to diabetes in 2010 shows 5.5%. Type 2diabetes is responsible for 85-95% of all diabetes in high-income countries and may account for an even higher percentage in low- and middle-income countries.

Diabetes is the single most important metabolic disease which can affect nearly every organ system in the body. It has been projected that 300 million individuals would be affected with diabetes by the year 2025. The reasons for this escalation are due to changes in lifestyle; people living longer than before (ageing) and low birth weight could lead to diabetes during adulthood. Diabetes related complications are coronary artery disease, peripheral vascular disease, neuropathy, retinopathy, nephropathy, etc. People with diabetes are 25 times more likely to develop blindness, 17 times more likely to develop kidney disease, 30-40 times more likely to undergo amputation, two to four times more likely to develop myocardial infarction and twice more likely to suffer a stroke than non-diabetics. Lifestyle modifications, inclusive of dietary modification, regular physical activity and weight reduction are indicated for prevention of diabetes.

Diabetes is chronic illness that requires continuing medical care and patient self-management education to prevent acute complications and to reduce the risk of long term complications. The National Urban Diabetes Survey in India has shown standardized prevalence of diabetes and impaired glucose tolerance to be 12.5 percent and 14 percent respectively with no gender difference. Subjects under 40 years of age had higher prevalence of IGT than diabetes (12.8 vs. 4.6: $P<0.001$) So India has garnered the notoriety of being the diabetic capital of the world.

Sakane N, Sato J (2014) did a Randomized controlled trial study to assess the effect of baseline HbA1c level on the development of diabetes by lifestyle intervention in primary healthcare settings. The annual incidence of Type 2 Diabetes mellitus were 2.7 and 5.1/100 person-years of follow-up in the Intensive Lifestyle Group and Usual Control Group, respectively. The cumulative incidence of Type 2 Diabetes mellitus was significantly lower in the Intensive Lifestyle Group than in the Usual Control Group among participants with HbA1c levels ≥5.7%. Intensive lifestyle intervention in primary healthcare setting is effective in preventing the development of Type 2 DM in Impaired Glucose Tolerance participants with HbA1c levels ≥5.7%, relative to those with HbA1c levels <5.7%.

Seema Abhujeet (2014) reported that the diabetes control in individuals worsened with longer duration of the disease (9.9+/- 5.5) years with neuropathy the most common complication (24.6%) followed by cardiovascular complications (23.6%), renal issues (21.1%), retinopathy (16.6%) and foot ulcers (5.5%). These results were closely in line with other results from south Indian population.

Vanstone M, Giacomini M (2013) did a systematic review and qualitative meta-synthesis to assess how diet modification challenges are magnified in vulnerable or marginalized people with diabetes and heart disease. Analysis identified 5 types of challenges that are common to both vulnerable and non-vulnerable patients: self-discipline, knowledge, coping with everyday stress, negotiating with family members, and managing the social significance of food. Vulnerable patients may experience additional barriers, many of which can magnify or exacerbate those common challenges.

Dorothy E Johnson (2011) theory advocates the fostering of efficient and effective behavioral functioning in the patient to prevent illness, composed of 7 behavioral subsystems includes afflictive, dependency, ingestive, eliminative, sexual, and aggressive and achievement. The 3 functional requirements for each subsystem include protection from noxious influences, provision for a nurturing environment, and stimulation for growth. An imbalance in any of the behavioral subsystem results in disequilibrium. Ingestive Subsystem fulfills the need to supply the biologic requirements for food and fluids.

Lamb WH (2010) stated that the overall annual incidence has risen from approximately 16 cases per 100,000 population in the 1990s to 24.3 cases per 100,000 population currently and is probably still increasing. Annual incidence varies from 0.61 cases per 100,000 populations in china, to 41.4 cases per 100,000 populations in Finland. Even more striking are the difference in incidence between mainland Italy (8.4 cases per 100,000 population) and the island of Sardinia (36.9 cases per 100,000) population.

Nelda Mier (2009) did a binational study which examined the prevalence and correlates the clinical depressive symptoms in Hispanics of Mexico origin with Type II diabetes living on both sides of the Texas Mexico border. Two binational samples, consisting of 172 adult Mexicans from South Texas and 200 adult Mexicans from the North eastern region were used to test personal and social correlates with clinical depressive symptoms. The results showed that clinical depressive symptom was similar in both south Texas and North eastern Mexico patients (39% and 40.5 % respectively).

Jenifer H (2008) stated that the prevalence of diabetes is rapidly rising all over the globe at an alarming rate over the past 30 years. The status of

diabetes has been changed from being considered as a mild disorder of the elderly to one of the major cause of morbidity and mortality affecting the youth and middle aged people.

Orem self-care theory examined how people or communities can achieve a healthy state through self-care, by themselves or with the help of the nurse. Orem used her theory to assess the self-care need of persons and nurses role in assisting or supporting persons in meeting those needs. Orem saw that in order for a person, in ill-health, become healthy and well, certain self-care needs must be met. If a person is not capable of providing self-care, the nurse would be responsible for providing most of the care. On other hand if the person is fully capable of providing basic self-care, the nurse would be the supporter / educator/ facilitator of that self-care.

The researcher during her clinical experience found that the number of out-patients with complications of diabetes were exceeding day to day. The self-care measures taken by the patient seems to be very low, prior to hospitalization. It is essential for the patients with diabetes are to be educated regarding nature of diabetes, complications and self-care measures.

STATEMENT OF THE PROBLEM

A quasi experimental study to evaluate the effectiveness of information education and communication package on knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in selected hospital at Trichy.

OBJECTIVES OF THE STUDY

1 To assess the existing level of knowledge and practice regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.

2 To assess the effectiveness of information education and communication package on knowledge and practice regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group.

3 To correlate the posttest level of knowledge and practice regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.

4 To determine the association between selected demographic variables and pretest level of knowledge and also selected demographic variables and posttest level of knowledge regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.

5 To determine the association between selected demographic variables and pretest level of practice and also selected demographic variables and posttest level of practice regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.

RESEARCH HYPOTHESES

H1 - There would be a significant difference in the level of knowledge regarding self-care before and after IEC package.

H2 - There would be a significant difference in the level of practice regarding self-care before and after IEC package.

H3 - There would be a significant relationship between the posttest level of knowledge and practice among diabetes mellitus patients on Insulin therapy.

H4 - There would be a significant association between the pretest level of knowledge and selected demographic variables among diabetes mellitus patients on Insulin therapy.

H5 -There would be a significant association between the posttest level of knowledge and selected demographic variables among diabetes mellitus patients on Insulin therapy.

H6 - There would be a significant association between the pretest level of practice and demographic variables among diabetes mellitus patients on Insulin therapy.

H7 - There would be a significant association between the posttest level of practice and demographic variables among diabetes mellitus patients on Insulin therapy.

OPERATIONAL DEFINITION

EFFECTIVENESS

Effectiveness is the capability of producing a desired result.

In this study it refers to possible outcome after information education and communication on self-care management of diabetes mellitus patients.

INFORMATION, EDUCATION AND COMMUNICATION

Information education and communication refers to a public health approach aiming at changing or reinforcing health related behavior in a target audience. Concerning a specific problem and within a pre – defined period of time through communication methods and principles.

In this study, information refers to the way of providing facts regarding self-care by giving pamphlets (diet).

Education involves teaching the patients regarding definition, causes, pathophysiology, signs and symptoms and self-care management of diabetes mellitus by power point presentation and foot care and insulin administration through demonstration.

Communication is the system and process that is used to communicate with the patients by lecture cum discussion.

KNOWLEDGE

Knowledge is an awareness or understanding of someone or something such as facts, information, description or skill.

In this study it refers to patient which measures self-administered questionnaire of diet, exercise, foot care, insulin administration regarding self-care of diabetes mellitus which measured by self-administered questionnaire.

PRACTICE

Practice means doing something regularly in order to do it better.

In this study it refers to action or step performed by the patients with diabetes mellitus on insulin therapy regarding self-care activity such as foot care and insulin administration which was measured by observational checklist practice questionnaire.

SELF CARE

Practice of activities that individual initiate and perform on their own behalf in maintaining the health and wellbeing, in view of wholly compensatory system, partially compensatory system and supportive or educative system.

In this study self-care refers to the measures taken by the patients with diabetes mellitus regarding the diet, exercise, foot care and insulin administration was measured by self-administered knowledge and practice questionnaire.

DIABETES MELLITUS PATIENTS ON INSULIN THERAPY

In this study it refers to those patients who were diagnosed to have diabetes mellitus and on Insulin therapy.

ASSUMPTIONS

1. Noncompliance to treatment will lead to severe complications.
2. Information education and communication enables to reach out the diabetes mellitus patients for decreasing complications.
3. Information education and communication package will help to attain maximum adherence to self-care.

DELIMITATIONS

The study was delimited to

1. Diabetes mellitus patients on insulin therapy
2. 60 samples only
3. 6 weeks only

CHAPTER – II

REVIEW OF LITERATURE

INTRODUCTION

Literature review is a critical summary of research in a topic of interest often prepared to put a research problem in context or as the basis for an implementation project.

-POLIT & HUNGLER.

The literature review is an essential component of the research process, as it helps formulating the research plan. It also helps the researcher to conduct his / her actual study. For the present study related literature was reviewed in depth regarding self-care among diabetes mellitus and it was organized under the following headings.

PART –I : LITERATURE RELATED TO DIABETES MELLITUS

PART –II : LITERATURE RELATED TO SELFCARE AMONG DIABETES MELLITUS

PART –I: LITERATURE RELATED TO DIABETES MELLITUS

Sorli C, Heile MK (2014) stated that in Type 2 diabetes mellitus Self-management requires patient awareness regarding the importance of lifestyle modifications, self-monitoring, and/or continuous glucose monitoring, improved methods of insulin delivery (e.g., insulin pens), and the enhanced convenience and safety provided by insulin analog. To increase the success rate of treatment of Type 2 Diabetes mellitus, the 2012 position

statement from the American Diabetes Association and the European Association for the Study of Diabetes focused on individualized patient care and provided clinicians with general treatment goals, implementation strategies, and tools to evaluate the quality of care.

Sun X, Zhang R (2014) stated that the elevated serum uric acid concentration is an independent risk factor and predictor of type 2 diabetes. Whether the uric acid-associated genes have an impact on Type 2Diabetes remains unclear. The aim of the study was to investigate the effects of the uric acid-associated genes on the risk of Type 2 Diabetes as well as glucose metabolism and insulin secretion. The results indicated that the uric acid-associated genes have an impact on the risk of Type 2Diabetes, glucose metabolism and insulin secretion in a Chinese population.

Rad GS, Bakht LA(2013) stated the Importance of social support in diabetes care. The results of the study indicated that the status of self-care and social support in patients with diabetes was not favorable. All the studied papers showed that there was a positive relationship between social support and self-care behavior. Also, some studies pointed to the positive effect of social support, especially family support and more specifically support from the spouse, on controlling blood sugar level and HbA1c. As social support can predict the health promoting behavior, this concept is also capable of predicting self-care behavior of patients with diabetes. Therefore, getting the family members, especially the spouse, involved in self-care behavior can be of significant importance in providing health care to patients with diabetes.

Adachi M, Yamaoka K (2013) conducted a randomized control study aimed to evaluate the effectiveness of a structured individual-based lifestyle education program to reduce the hemoglobin A1C level in type 2 diabetes

patients delivered by registered dietitians in primary care clinical settings. The mean change at 6 months from baseline in HbA1c was a 0.7% decrease in the intervention group (n = 100) and a 0.2% decrease in the control group (n = 93). After adjusting for baseline values and other factors, the difference was still significant. The intervention group had a significantly greater decrease in mean energy intake at dinner compared with the control group and a greater increase in mean vegetable intake for the whole day meal. The structured individual-based lifestyle education program that was provided in primary care settings for patients with type 2 diabetes resulted in greater improvement in HbA1c levels than usual diabetes care and education.

Ye Z, Cong L (2014) did a population-based study in China, to identify optimal cut-off points of fasting plasma glucose for two-step strategy in screening of undiagnosed diabetes. This study found the sensitivities of all the two-step screening strategies with further Oral Glucose Tolerance Test at different Fasting Plasma Glucose cut-off points from 5.0 to 7.0 (mmol/L) ranged from 0.66 to 0.91. For the FPG point of 5.0 mmol/L, 91 percent of undiagnosed cases were identified.

Yoon U, Kwok LL (2013) conducted a randomized controlled trial to evaluate the efficacy of lifestyle interventions in reducing diabetes incidence in patients with impaired glucose tolerance under consideration of heterogeneity in lifestyle interventions and follow up time of the included studies, this systematic review illustrated that lifestyle intervention can have a beneficial effect on the incidence of diabetes in patients with impaired glucose tolerance. No long-term benefit in mortality and morbidity was found. Development of standardized lifestyle intervention program is strongly needed and further long-term intervention trials using this program are crucial in evidencing the long-term efficacy.

Waugh NR, Taylor-Phillips (2013) reported a study to provide an update for the UK National Screening Committee on screening for Type 2Diabetes Mellitus. Glycated hemoglobin testing has advantages in not requiring a fasting sample, and because it is a predictor of vascular disease across a wider range than just the diabetic one. However, it lacks sensitivity and would miss some people with diabetes. Absolute values of HbA1c may be more useful as part of overall risk assessment than a dichotomous 'diabetes or not diabetes' diagnosis. The oral glucose tolerance test is more sensitive, but inconvenient, more costly, has imperfect reproducibility and is less popular, meaning that uptake would be lower.

Daivadanam M, Absetz P (2013) did a study to describe the findings from research aimed at informing the development and evaluation of a Diabetes Prevention Programme in Kerala, India. findings from the systematic review and focus groups identified many environmental and personal determinants of these unhealthy lifestyle changes, including less than ideal accessibility to and availability of health services, cultural values and norms, optimistic bias and other misconceptions related to risk and low expectations regarding one's ability to make lifestyle changes in order to influence health and disease outcomes. India's national programme for the prevention and control of major non-communicable diseases also provide a supportive environment for further community-based efforts to prevent diabetes.

Kadayam G Gomathi (2012) did a study to assess diabetes mellitus (DM)-related knowledge and practices. Data on 168 university students (47 males and 121 females) were included in the analysis. Of the participants, 25% were overweight or obese and only 27% exercised regularly. Regarding their knowledge of DM, 70% know that it is characterized by high blood sugar levels and identified family history as a major risk factor. Knowledge

of diabetes was found to be higher in females compared to males. No significant differences were observed in the health behavior of participants with or without a family history of Diabetes mellitus.

Saito T, Watanabe M (2011) did a randomized controlled trial study to examine the lifestyle modification and prevention of type 2 diabetes in overweight Japanese with impaired fasting glucose levels. Estimated cumulative incidences of type 2 diabetes were 12.2% in the frequent intervention group and 16.6% in the control group. In addition, identifying individuals with more deteriorated glycemic status by using 75-g oral glucose tolerance test findings or, especially, measurement of hemoglobin A1C levels, could enhance the efficacy of lifestyle modifications.

Javid A.et.al (2011) conducted a study to find the prevalence and risk factors for diabetes mellitus in the age group of 20 years and above in one of the semi urban areas. The prevalence of diabetes mellitus was 6.05% with known diabetes mellitus being 4.03% of the study population and undiagnosed diabetes mellitus being 2.02% of thesubjects.

Saja, F.Ghannam. et.al. (2010), performed a retrospective study, in Medical laboratory sciences, Rafedia & al watani, Hospital, Nablus, about the relationship between diabetes mellitus and age (above 30 years) among 83 samples. The blood sugar level was obtained from each sample and the findings were the majority of diabetic cases increases in the age above 40 years.

Yang J, Li S(2009) did a cross-sectional study to examine levels of perceived social support and depression and to identify the related factors and predictors of depression among Chinese community-dwelling people with type 2 diabetes. Personal information questionnaire was used to obtain socio-demographic characteristics. The mean index score for depression was

46.53 and 39.2% of the subjects reported depression. The mean score for perceived social support was 5.24. The best predictors of depression were perceived social support, duration of diabetes, regular exercise, work status and other chronic diseases.

Khattab M.et.al (2009) conducted a study to determine factors associated with poor glycemic control among patients with type 2 Diabetes mellitus. Results showed that increased duration of Diabetes mellitus (>7 years vs.< or7 years) not following eating plan, negative attitudes towards Diabetes mellitus, and increasedbarriers to adherence scale were significantly associated with increased poor glycemic control. The author found that longer duration of diabetes and not adherence to Diabetes mellitus self-care management behavior was associated with poor glycemic control. They recommend that an educational program that emphasizes lifestyle modification with importance of adherence to treatment regimen would be great benefit in glycemic control.

Maysaa (2009) conducted a study with pre-structured questionnaire sought information on socio demographic, clinical characteristics, self-care management behaviors, medication, barriers to adherence and attitude towards diabetes. The study concluded that longer duration of diabetes and not adherent to diabetes self-care management behaviors were associated with poor glycemic control. An education program emphasis life style modification with adherence to treatment regimen would be of great benefit in glycemic control.

PART –II: LITERATURE RELATED TO SELFCARE AMONG DIABETES MELLITUS

Pamela Jo Johnson (2014) examined the differences in diabetes self-care activities by race/ethnicity and insulin use. Data were from the 2011 Behavioral Risk Factor Surveillance System for adults with diabetes. Outcomes included 5 diabetes self-care activities (blood glucose monitoring, foot checks, nonsmoking, physical activity, healthy eating) and 3 levels of diabetes self-care (high, moderate, low). Only 20% of adults had high levels of diabetes self-care, while 64% had moderate and 16% had low self-care. Racial/ethnic differences were apparent for every self-care activity among non–insulin users but only for glucose monitoring and foot checks among insulin users. Findings suggest that culturally tailored messages about diabetes self-care may be needed, in addition to more effective population promotion of healthy lifestyles and risk reduction behaviors to improve diabetes control and overall health.

Forjuoh SN, Ory MG et.al (2014) conducted a study to assess the effectiveness of the Chronic Disease Self-Management Program on Glycated hemoglobin A1C and selected self-reported measures. Demographic and baseline clinical characteristics were generally comparable between the two groups. The average baseline HbA1c values in the CDSMP and control groups were 9.4% and 9.2%, respectively. Significant reductions in HbA1c were seen at 12 months for the two groups, with adjusted changes around 0.6% ($P < 0.0001$), but the reductions did not differ significantly between the two groups ($P = 0.885$). Few significant differences were observed in participants' diabetes self-care activities. The Chronic Disease Self-Management Program intervention may not lower HbA1c any better than good routine care in an integrated healthcare system.

Khemayanto H, Shi B (2014) conducted a randomized control trials, meta-analysis summarized the importance of Mediterranean diet in the prevention and management of type 2 diabetes. Based on the evidence gathered and evaluated from various studies, we concluded combination and interaction of Mediterranean diet components, such as fruits, vegetables, nuts, legumes, whole grains, fish and moderate intakes of red wine, which contain essential nutrients and health promoting properties, including high fibers, high magnesium, high anti-oxidant and high mono unsaturated fatty acids (MUFA). In the modern society, poor dietary habits accompanied by inadequate physical activity are associated with the risk of having obesity and type 2 diabetes. Promoting healthy lifestyle and diet are not only beneficial in the prevention and treatment of various diseases but also important in maintaining the overall health. Switching from unhealthy diet to health-friendly diet such as Mediterranean diet represents healthy lifestyle choice.

Pugliese G, Zanuso S (2014) stated that the cardio respiratory fitness, which is determined mainly by the level of physical activity, is inversely related to mortality in the general population as well as in subjects with diabetes, the incidence of which is also increased by low exercise capacity. Exercise is capable of promoting glucose utilization in normal subjects as well as in insulin-deficient or insulin-resistant diabetic individuals. The extent of reduction of blood glucose was related to baseline values but not to energy expenditure and was higher in subjects treated with insulin than in those on diet or oral hypoglycemic agents. Thus, supervised exercise training associated with blood glucose monitoring is an effective and safe intervention to decrease blood glucose levels in type 2.

Mayega RW, Etajak S (2014) assessed perceptions about type 2 diabetes and lifestyle change among people afflicted or at high risk of this disease in a low income setting in Iganga Uganda. Twelve focus group discussions of eight participants each were conducted, balancing rural and peri-urban (near the Municipality) residence and gender. Although participants are willing to change their diet, they mention numerous barriers including poverty, family size, and access to some foods. Because of their good taste, reduction of high risk foods like sugar and fried food is perceived as 'sacrificing a good life'. Increments in physical activity were said to be feasible, but only in familiar forms like domestic work.

Mohebi S, Azadbakht L (2013) conducted a study about the key role of self-efficacy as a determinant agent in self-caring of diabetic patients. Self-care situation among diabetic patients not only is unsatisfactory but also the results show that self-efficacy rate is low among them. The findings of the studies prove that there is a direct relation between self-efficacy and self-care in the patients in a way that this construct owns the predictability power of self-care behavior.

Mohebi S, Sharifirad G (2013) stated the nutritional behavior is a complicated process in which various factors play the role, this study aimed at specifying the effective factors in nutritional behavior of diabetic patients based on Health Promotion Model. Unfavorable self-care situation especially, inappropriate nutritional behavior is related to some effective modifiable factors. Perceived benefits and self-efficacy regarding behaviors play a major role in the nutritional behaviors. Following the relationship between constructs of Health Promotion Model and nutritional behavior the constructs of this model can be utilized as the basis for educational intervention among diabetes.

David Trouilloud, Jennifer Regnier (2013) conducted a study to evaluate the impact of a three-day therapeutic education programme on perceived competence, self-management behaviors (i.e. physical activity, diet and medication) and glycemic control among adults with type 2 diabetes. The results confirm that therapeutic education may be a powerful healthcare intervention to improve lifestyle and health status of people with type 2 diabetes. We observed that the education programme used in this study generated positive changes in glycemic control and adherence to physical activity and diet after three months follow-up.

Shrivastava.et al(2013) stated that the diabetes education is important but it must be transferred to action or self-care activities to fully benefit the patient. Self-monitoring provides information about current glycemic status self-glucose monitoring, and foot care, allowing for assessment of therapy and guiding adjustments in diet, exercise and medication in order to achieve optimal glycemic control. Irrespective of weight loss, engaging in regular physical activity has been found to be associated with improved health outcomes among diabetics.

Nam S, Song HJ (2013) conducted a study to examine challenges in diabetes self-management among Korean Americans to guide clinicians in providing culturally appropriate and population-targeted diabetes care. Five focus groups with 23 Korean Americans with type 2 diabetes, 30 to 75 years of age, were conducted. Most participants were reluctant to disclose diabetes because of social stigma and said that they did not know much about diabetes and its complications. Providing diabetes education at the community level is important to raise public awareness of diabetes and to eliminate social stigma. To facilitate family support for individuals with type 2 diabetes, it is appropriate to include the entire family in diabetes educational programs and to promote individual family members' health in the context of maintaining their role within the family.

Song Y, Song HJ (2012) conducted a study to examine the effect of unmet needs for support on their self-care activities. Findings indicated that for diabetic Korean Americans, the primary source of social support differed according to gender. Unmet needs for support were significantly associated with self-care activities, but the amount of support needs and social support received were not. The hierarchical regression model explained about 30% of total variance in self-care activities. The findings highlight the importance of considering unmet needs for social support when addressing self- care activities in type 2 diabetes patients. Future interventions should focus on filling gaps in social support and tailoring approaches according to key determinants, such as gender or education level, to improve self-care activities in the context of type 2 diabetes care.

Gillett M, Royle P (2012) reported that the clinical effectiveness and cost-effectiveness of non-pharmacological interventions, including diet and physical activity, for the prevention of Type 2Diabetes Mellitus in people with intermediate hyperglycemia. The best effects were seen in participants who adhered best to the lifestyle changes; a scenario of a trial of lifestyle change but a switch to metformin after 1 year in those who did not adhere sufficiently appeared to be the most cost-effective option.

Jones, Bartlee (2012) stated that to prevent serious morbidity and mortality, it requires dedication to demanding self-care behaviors in multiple domains. The objective of this study was to identify predictors of self-care behaviors among patients with diabetes. Majority of the study respondents 134(60.4%) were female and the mean age was 49.7. More than half 147(66.2%) of them were medically diagnosed with type-2 diabetes. 208(93.7%) had general knowledge about diabetes and specific knowledge about diabetes self-care 207(93.2%). Large proportion of them had moderate perceived susceptibility 174(78.4%) and severity 112(50.5%). More than

half of the respondents 149(67.1%) had less perceived barrier while only 30 (13.5%) of them had high self-efficacy to self-care practices related to diabetes mellitus. Only 87(39.2%) followed the recommended self-care practices on diabetes.

Senthil Kumar (2011) conducted a systematic independent literature search to describe the role of physical activity in prevention and treatment of type II Diabetes Mellitus and its complications among 25 reviews. The result of the study showed that, 14 studies were on prevention only; 7 were on treatment only; 2 were on both prevention and treatment; and 2 were guidelines/ consensus statements. From the prevention studies, physical activity reduced the risk of Type 2 Diabetes Mellitus by 25-35%. The study had been concluded thatregular physical activity such as simple walking for 30min per day for all/most days of the week was shown to prevent and manage Type II Diabetes Mellitus effectively.

Inoue M, Takahashi M, Kai (2010)conducted a cross-sectional observational study. The patients completed a self-administered questionnaire that understanding of diabetes care, and self-efficacy for diabetes management. Communicative and critical Health literacy were positively associated with understanding of diabetes care and self-efficacy , respectively. The clarity of physician's explanation was associated with understanding of diabetes care and self-efficacy. In multivariate regression models, Health literacy and perceived clarity of the physician's explanation were independently associated with understanding of diabetes care and self-efficacy.

Osborn CY et al (2010) conducted a study a patients with diabetes were recruited from an outpatient primary care clinic. We collected information on demographics, health literacy, diabetes knowledge, diabetes

fatalism, social support, and diabetes self-care, and hemoglobin A1c values were extracted from the medical record. Structural equation models tested the predicted pathways linking health literacy to diabetes self-care and glycemic control. No direct relationship was observed between health literacy and diabetes self-care or glycemic control. Health literacy had a direct effect on social support and through social support had an indirect effect on diabetes self-care and on glycemic control. More diabetes knowledge, less fatalism, and more social support were independent, direct predictors of diabetes self-care and through self-care were related to glycemic control. The author concluded the findings suggest health literacy has an indirect effect on diabetes self-care and glycemic control through its association with social support. This suggests that for patients with limited health literacy, enhancing social support would facilitate diabetes self-care and improved glycemic control.

Aust et.al (2009) conducted a study to explore medication knowledge and self-management practice of people with type 2 Diabetes mellitus from to medication knowledge and self-management were inadequate and could leads to adverse events.

Ukwe Chinwe V(2009) proposed that knowledge of diabetes self-care was associated with sex, age, educational status, and years with diabetes. Female patients, younger patients (18-35 years), patients who were attending or stopped at secondary school and patients who had lived many years with diabetes (>10years) were more likely to be knowledgeable. When extracted knowledge factor 2 (self-care), factor 3 (cardiovascular complications), and factor 4 (non-cardiovascular complications) were correlated with factor 1 (diabetes) their correlation coefficients were 0.90, 0.94, and 0.71respectively. This implies that increase the knowledge of diabetes self-care and knowledge of cardiovascular complications.

Meryl broad et al (2008)did a study on diabetes psychological insulin resistance. The purpose of the study was to define and understand patient psychological insulin resistance and its impact on diabetes management. The result of the study showed that psychological insulin resistance is complex and multifaceted. It plays an important role, although often ignored, in 35 diabetes management. Assisting health care Professional in better understanding psychological insulin resistance from the patient's perspective should result in improved treatment outcomes. By tailoring treatments to patients psychological insulin resistance clinicians may be better able to help their patients to begin insulin treatment sooner and improve compliance thus facilitating target glycemic control.

CONCLUSION

Based on the above literature it was stated that the prevalence of diabetes mellitus is higher and knowledge regarding diabetes mellitus is also found to be less. So information education and communication package may be an effective tool to increase patient's knowledge on self-care.

CONCEPTUAL FRAMEWORK

Conceptual framework for this study was developed from the existing theory and it helps in defining the concepts of interest and proposing relationship among them. The model gives direction for the planning data collection and interpretation of findings (Burns & Groove, 1996).

The present study aimed to assess the effectiveness of information, education and communication package on knowledge and practice regarding self-care among diabetes mellitus. Conceptual framework of the present study was developed based on the general system theory pioneered by Ludwig Von Bertalanffy (1968).

General system theory (GST) consists of the scientific explanation of whole and wholeness. The interdisciplinary nature of concepts, models and principles applying to system provides a possible approach towards the unification of science. A system is defined as a whole with inter related parts in which the parts have a function and the system as a totality has a function.

Each system has its subsystem with its own imaginary boundaries which separate the systems from its environment.

These interacting elements or components or sub systems may not serve a different function but ultimately they all serve a common purpose to contribute to the overall goal of the system. General system theory serves as a model for viewing people as interacting with the environment. Each system has definable boundaries that filter and regulate the flow of input and output exchange with the environment. The main concept in the systems theory is input, throughput and output.

INPUT

Input is any form of energy, information, material or human that enters into the system through its boundaries. Through the process of selecting the system that regulates the type and amount of input received.

In this study, the input consists of the pretest assessment of knowledge and practice of patients with diabetes mellitus on insulin therapy in experimental group and control group.

THROUGH PUT

It is the process that occurs between the input and output, which enables the input to be transformed as output in such a way that can be readily used by the system.

Information education communication process of transformation of knowledge and practice of self-care on patients with diabetes mellitus by using, power point presentation, and lecture cum discussion and through demonstration in foot care and insulin administration in experimental group and there is no intervention given to the control group.

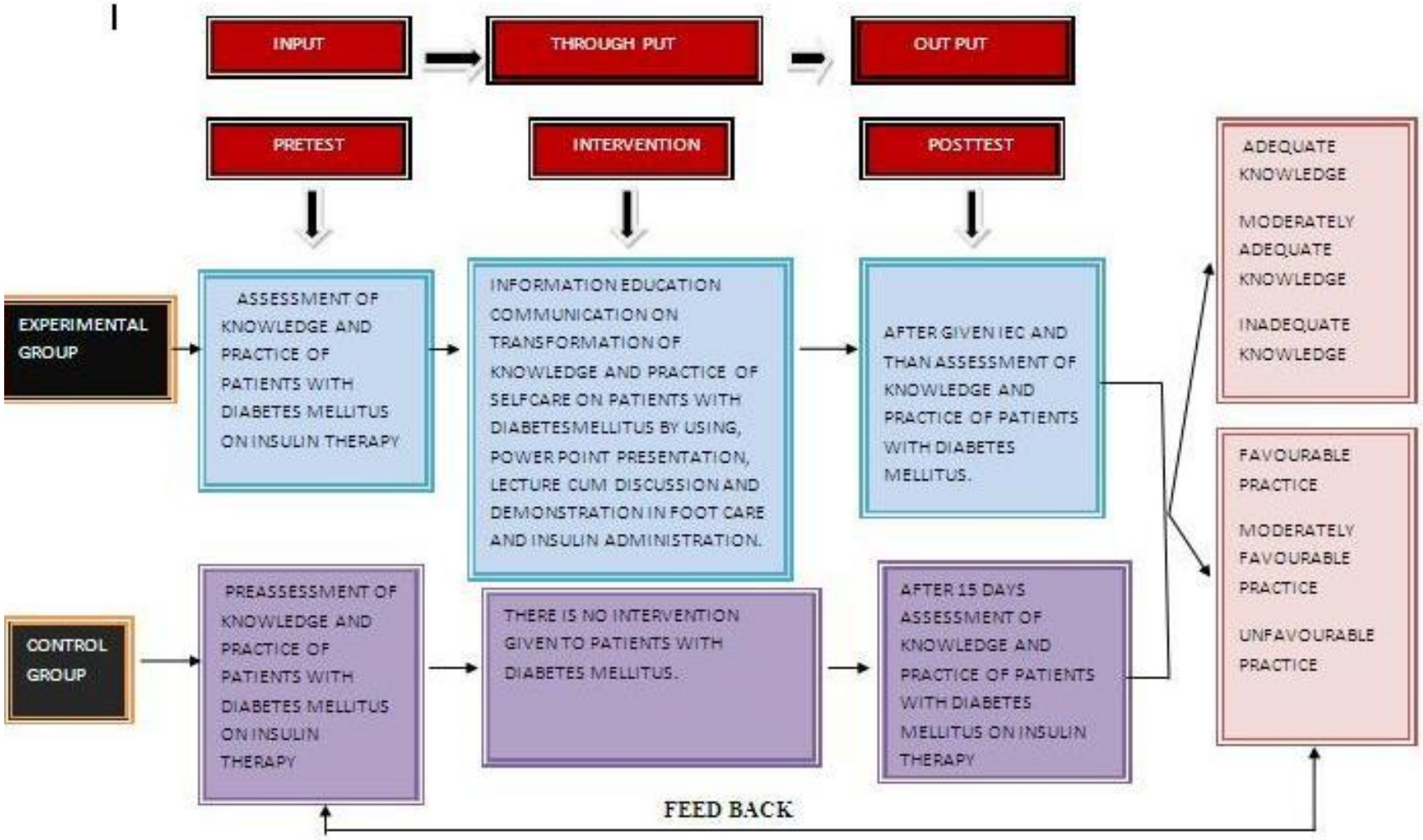
OUT PUT

It is any energy, information or material that is transferred, to the environment after processing the input, the system's output to the environment is an altered response.

In this study output, which include the improvement of knowledge and practice on self-care among diabetes mellitus, after Information Education and Communication package as measured by the post test.

Feedback refers to environmental responses to the systems output in adjustment, correction and to the environment. Hence, the posttest reveals the effectiveness of Information Education and Communication package by increase in level of knowledge and change the practice.

CONCEPTUAL FRAME WORK BASED ON GENERAL SYSTEM'S THEORY



CHAPTER -III

RESEARCH METHODOLOGY

Methodology of research refers to ways of obtaining, organizing and analyzing data.

The research methodology includes the research design, setting of the study, population, sample, sampling technique, criteria for sample selection, sample size, research tools and technique, validity, reliability, scoring procedure, reliability, pilot study, data collection procedure and plan for data analysis.

RESEARCH APPROACH

A Quantitative approach was used for this study.

RESEARCH DESIGN

Quasi experimental Nonequivalent control group pretest- posttest design was used in this study.

EXPERIMENTAL GROUP O1 X O2

CONTROL GROUP O3 O4

O1 - Pre-test

X - Treatment

O2 - post test

O3 - Pre-test

O4 - Post test

SETTING OF THE STUDY

The study was conducted in G.V.N. Hospital, Trichy for experimental group. It is a 150 bedded private hospital. It includes multispecialty department. Also the hospital has advanced diagnostic laboratory. It has an outpatient and inpatient diabetic department which functions round the clock. The number of diabetic out-patients will be 15-20 and in-patients will be 10-15. The setting was selected on the basis of feasibility and also the investigator is familiar of the setting out of her professional experience.

And for control group in Dr. G. Viswanathan specialty Hospital, Trichy. It is a 150 bedded private hospital. It includes multispecialty department. Also the hospital has advanced diagnostic laboratory. It also has diabetic out-patients and in-patients department. The number of diabetic out-patients will be 15-20 and in-patients will be 10-15.The reason for selecting this hospital was the availability of samples, facility for the study and expectation of cooperation from the medical and nursing staff for collection of data.

POPULATION

The target population of this study was diabetes mellitus patients (In patients & Outpatients) who were on insulin therapy.

SAMPLE

The sample of this study consisted of patients with diabetes mellitus (in patients & out patients) on insulin therapy at G.V.N Hospital and DR.G.Viswanathan specialty hospitals Trichy.

SAMPLE SIZE

The size of sample was 60 patients with diabetes mellitus on insulin therapy. In that 30 patients were in control group (DR.G. Viswanathan Specialty Hospital) and 30 patients were in experimental group (G.V.N Hospital)

SAMPLING TECHNIQUE

Non probability convenience sampling technique was used in this study.

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA

- Patients who were diabetes mellitus on insulin therapy.
- Age above 20 years.
- Patients who were willing to participate in the study.

EXCLUSION CRITERIA

- Who developed any other peripheral vascular disorders
- Who were developed diabetic foot ulcers.
- Patients having any associated diseases like (respiratory disorders)
- Patients who were critically ill

RESEARCH TOOL AND TECHNIQUE

In this research study self-administered questionnaire was used to assess the knowledge of diabetes mellitus patients regarding self-care and practice was assessed with observational check list questionnaire among diabetes mellitus patients on insulin therapy in selected hospital Trichy.

DESCRIPTION OF THE TOOL

The investigator developed the self-administered questionnaire for this study based on review books journals and research.

SECTION I - This section consisted of 12 demographic variables.

SECTION II - This section consisted of 25 knowledge questionnaire regarding self-care

SECTION III - This section consisted of 20 practice observation checklist on self-care.

SCORING PROCEDURE

SECTION II

The total score was 25.Ascore of 1 mark was given for every correct answer and zero was given for every wrong answer. A score was ranged as follows

Level of knowledge

Inadequate knowledge	-	less than 50%
Moderately adequate knowledge	-	51-75%
Adequate knowledge	-	76-100%

SECTION III

The total score was 20.Ascore of 1 mark was given for every correct answer and zero was given for every wrong answer. A score was ranged as follows

Level of practice

Unfavorable practice	-	less than 50%
Moderately favorable practice	-	51-75%
Favorable practice	-	76-100%

TESTING OF THE TOOL

VALIDITY

The tool was evaluated by 5 experts who were requested to give their valuable suggestion about the content areas, relevance, clarity and appropriate need of the items. The questionnaire was developed by the investigator based on the review of literature. Two Items were modified based on the suggestion.

RELIABILITY

To ensure the feasibility, the tools were administered to 10 diabetes mellitus patients on insulin therapy, who were not included in main study. Reliability of the tool was assessed by split half method and inters rater reliability method. The reliability of the questionnaire was (knowledge score r = 0.86, practice score r = 0.8). Hence the tool was reliable.

PILOT SYUDY

After obtaining permission from the authority concerned, a pilot study was done with 10 diabetes mellitus patients on insulin therapy, in selected hospital Trichy during 5.5.2014 to 16.5.2014.The investigator had taken DR.G.Viswanathan Specialty hospital for control group and G.V.N Hospital for experimental group. After obtaining oral consent from the diabetes mellitus patients on insulin therapy, pretest was conducted and nursing

interventions was given to the experimental group. After 1week of nursing intervention, the posttest knowledge level was improved in experimental group. For control group pretest was given and after 1week posttest was given. The pilot study was designed to find out the feasibility of the tool and practicability of designed methodology. The pilot study samples were excluded in main study.

DATA COLLECTION PROCEDURE

The period of data collection was started from 02.06.2014 to 11.07.2014.Before starting the study, the investigator obtained formal permission from the medical director of G.V.N hospital for experimental group and Dr. G. Viswanathan specialty hospital, for control group, to conduct the study. 60 samples were selected with non-probability convenience sampling technique and nonequivalent pretest, posttest control group design was used. The data were collected for 6 day a week. The timing of data collection was from 9.00am to 5.00 pm. The researcher identified the samples. Five to ten samples were selected per day depending on the availability. The researcher first meets the samples, rapport was developed and the researcher obtained written consent from all samples. The nature and purpose of the study was explained to the selected samples. First pre assessment was done by using knowledge and practice questionnaire regarding self-care among diabetes mellitus and the completed questionnaire will be collected from them for scoring. The information education and communication was administered through PowerPoint presentation for 8-10 minutes and demonstration on insulin administration and foot care was also given. The adequate time was given to all study samples to clarify the doubts. The posttest assessment was done 15 days after administration of IEC package, appropriate response was obtained from selected samples based on the questionnaire. In control groups the pretest and posttest was done without intervention.

PLAN FOR DATA ANALYSIS

The collected data would be arranged and tabulated to represent the finding of the study. Both descriptive and inferential statistics would be used. All the analysis was done by SPSS 16thversion.

Percentage, mean, standard deviation were used to analyze the demographic data.

Paired‘t’ test was used to compare the pretest and the post test scores of knowledge and practice.

Independent‘t’ test was used to compare the experimental group and control group knowledge and practice.

Correlation between the post test knowledge and practice in experimental group and control group.

Chi-square was used to know the association between demographic variables with pretest and posttest level of knowledge and practice scores.

ETHICAL CONSIDERATION

Formal permission from the principal and head of the department was obtained prior to the study. Also formal written letter was given to director and nursing superintendent of the hospital. For each samples informed consent was obtained before administration of tool. The samples are assured that the confidentiality would be maintained. The samples were allowed to withdraw from the study at any time. The purpose of the study was explained to the all samples.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with the description of the sample, analysis and interpretation of the data to assess the effectiveness of information, education and communication regarding self-care among diabetes mellitus patients on insulin therapy. The obtained data has been classified, grouped and analyzed statistically based on the objectives of the study.

OBJECTIVES OF THE STUDY

1. To assess the existing level of knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in experimental group and control group.
2. To assess the effectiveness of information education and communication package on knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in experimental group.
3. To correlate the posttest level of knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in experimental group and control group.
4. To determine the association between selected demographic variables and pretest level of knowledge and also selected demographic variables and posttest level of knowledge regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.
5. To determine the association between selected demographic variables and pretest level of practice and also selected demographic variables and posttest level of practice regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.

ANALYSIS AND INTERPRETATION OF FINDINGS

The analysis of data has been organized and presented under the following headings

SECTION-1: Distribution of samples according to their demographic variables in experimental group and control group

SECTION-2: Distribution of pre assessment scores on the level of knowledge and practice in experimental group and control group.

SECTION-3: Percentage distribution of knowledge scores of patients in experimental group and control group.

SECTION-4: Percentage distribution of practice scores of patients in experimental group and control group.

SECTION-5: Comparison of mean scores between pretest with posttest level of knowledge and practice in experimental group and control group.

SECTION-6 Comparison of posttest level of knowledge and practice in experimental group and control group.

SECTION-7: Correlation between the posttest level of knowledge and practice in experimental group and control group.

SECTION-8: Association of selected demographic variables with pretest level of knowledge in experimental group and control group.

SECTION-9: Association of selected demographic variables with posttest level of knowledge in experimental group and control group.

SECTION-10: Association of selected demographic variables with pretest level of practice in experimental group and control group.

SECTION-11: Association of selected demographic variables with posttest level of practice in experimental group and control group.

SECTION-1

This section deals with the demographic characteristics of the sample

Table- 1

Frequency and percentage distribution of samples according to demographic variables

N=60

DEMOGRAPHIC VARIABLES	EXPERIMENTAL GROUP(n=30)		CONTROL GROUP(n=30)	
	Frequency	Percentage %	Frequency	Percentage %
1. AGE				
a. 30-40 years	1	3.3	5	16.7
b. 41-50 years	3	10.0	6	20.0
c. above 50 years	26	86.7	19	63.3
2. SEX				
a. Male	14	46.7	10	33.3
b. Female	16	53.3	20	66.7
3.MARITAL STATUS				
a. Married	24	80.0	27	90.0
b. Unmarried	1	3.3	2	6.7
c. widow	5	16.7	1	3.3
4. RELIGION				
a. Hindu	27	90.0	27	90.0
b. Christian	2	6.7	2	6.7
c. Muslim	1	3.3	1	3.3
5.EDUCATIONAL STATUS				
a. Illiterate	11	36.7	8	26.7
b. Primary education	16	53.3	10	33.3
c. Higher secondary	2	6.7	8	26.7
d. Graduate or above	1	3.3	4	13.3

6. OCCUPATION				
a. Business	2	6.7	5	16.7
b. Government	2	6.7	3	10.0
c. Cooli	17	56.6	7	23.3
d. House wife	9	30.0	15	50.0
7. INCOME OF THE FAMILY PER MONTH				
a. Rs 3000-5000 /-	23	76.7	6	20.0
b. Rs 5000-10000 /-	6	20.0	19	63.3
c. Above Rs 10000 /-	1	3.3	5	16.7
8. AREA OF LIVING				
a. Urban	27	90.0	7	23.3
b. Rural	3	10.0	23	76.7
9. DURATION OF DIABETES MELLITUS				
a. Less than 5 years	2	6.7	19	63.3
b. 5-10 years	20	66.7	6	20.
c. Above 10 years	8	26.6	5	16.7
10. DURATION OF TAKING INSULIN INJECTION				
a. Less than 5 years	15	50.0	23	76.7
b. 5-10 years	9	30.0	6	20.0
c. Above 10 years	6	20.0	1	3.3
11. DIETARY PATTERN				
a. Vegetarian	2	6.7	2	6.7
b. Non vegetarian	28	93.3	28	93.3
12. EXERCISE				
a. Yes	3	10.0	11	36.7
b. No	27	90.0	19	63.3

The above table-1, shows that the majority of them 19(63.3) in control group and 26 (86.7) in experimental group belongs to age group of above 50 years. Most of them 16 (53.3) in control group and 20 (66.7) in experimental group were female.

Majority of them 27 (90.0) in control group and 24 (80.0) in experimental group were married. Most of them 27 (90.0) in control group and 27 (90.0) in experimental group were Hindu.

The majority of them 11(36.7) in control group and 16(53.3) in experimental group had their education up to primary level.

Most of them 15(50.0) in control group were house wife and 17 (56.6) in experimental group were collie.

Majority of them 19 (63.3) in control group were family income Rs 5000-10000 and 23 (76.7) in experimental group were family income Rs 3000-5000/-

Majority of them 23 (76.7) in control group were living in rural and 27 (90.0) in experimental group living in urban.

Majority of them 23(76.7) in control group have less than 5 years and 19(63.3) in experimental group have 5-10 years of duration illness.

Most of them 15(50.0) in experimental group and 23(76.7) in control group were taking insulin.

Both the groups, about 28(93.3) were consuming non vegetarian dietary pattern.

Most of them 27(90.0) in experimental group and 19(63.3) in control group were not doing exercise.

SECTION-2

This section deals with the distribution of pre assessment scores on the level of knowledge and practice in experimental group and control group.

Table: 2 Distributions of pre test scores on the level of knowledge and practice in experimental group and control group.

GROUPS	KNOWLEDGE			PRACTICE		
	adequate	moderately adequate	inadequate	favorable	Moderately favorable	unfavorable
Experimental group	3	14	13	3	5	22
Control group	1	3	26	1	7	22

Table-2 shows the distribution of pre test scores on the level of knowledge and practice in the experimental group and control group. Majority of patients were 14(46.6) moderately adequate knowledge and 22(73.3) were unfavorable practice in experimental group. Majority of patients were 26(86.6) inadequate knowledge and 22(73.3) were unfavorable practice in control group.

SECTION- 3

Pretest and posttest knowledge among diabetes mellitus patients on insulin therapy in experimental group and control group.

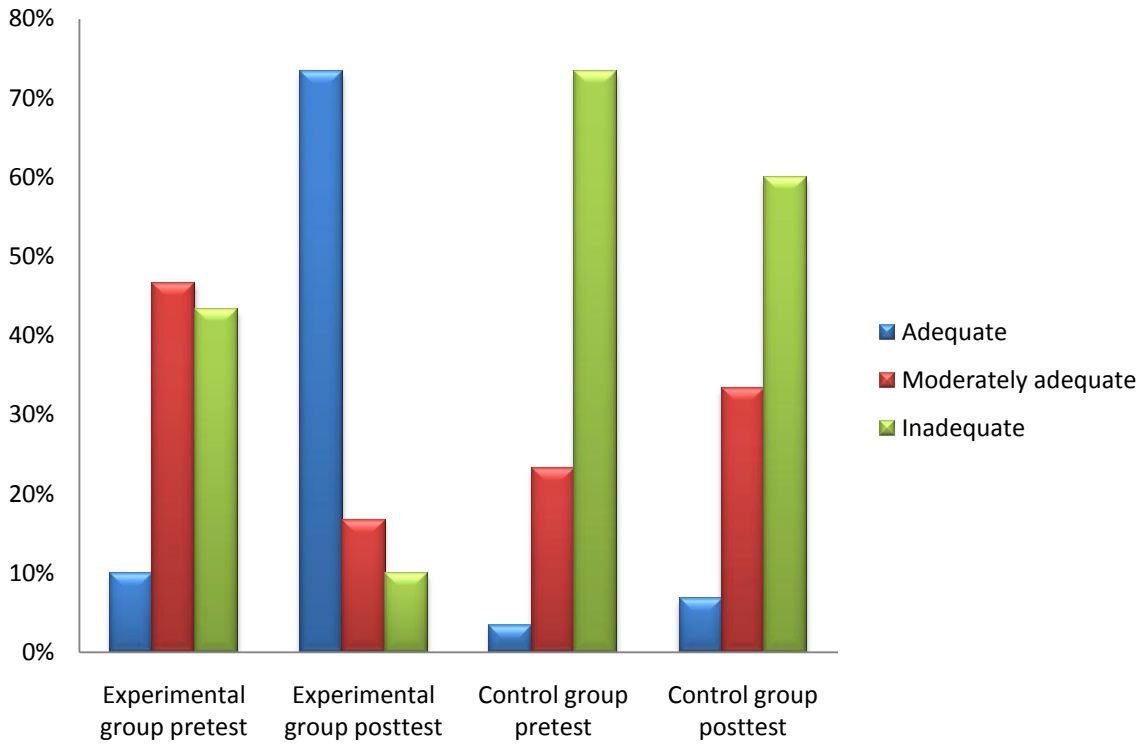


Figure-1 shows the percentage distribution of knowledge scores of patients in experimental group and control group.

SECTION –4

Pretest and posttest practice among diabetes mellitus patients on insulin therapy in experimental group and control group.

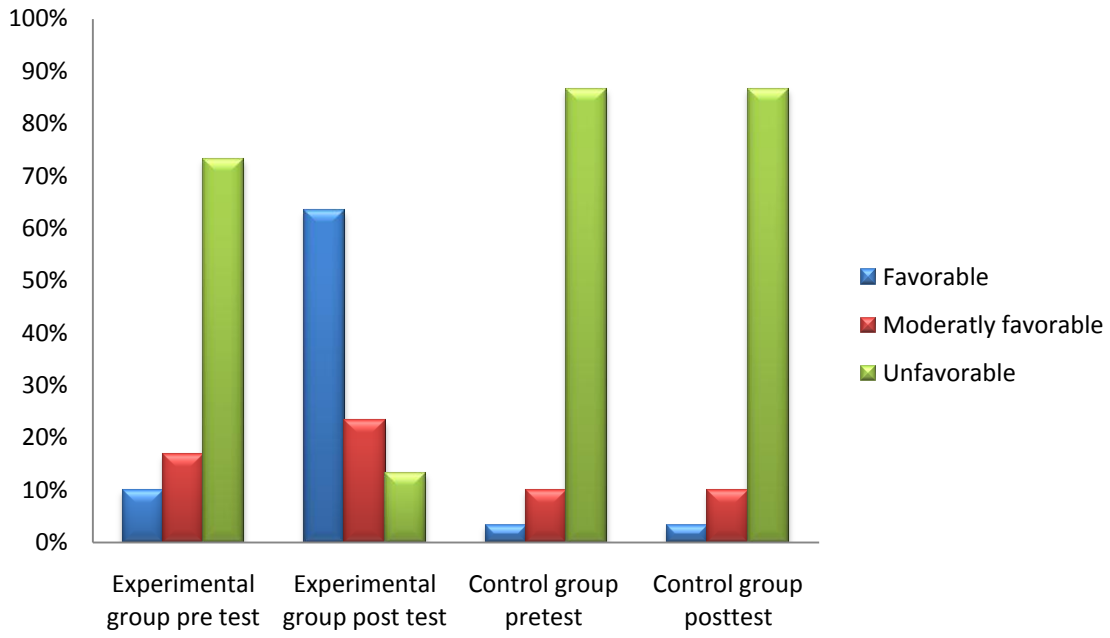


Figure-2 shows the percentage distribution of practice scores of patient in experimental group and control group.

SECTION-5

Comparison of pretest and post test scores on knowledge and practice in experimental group and control group

Table-3

Groups	Pre test		Post test		Mean difference	Paired 't' test
	Mean	SD	Mean	SD		
Experimental group						
knowledge	13.37	3.41	19.93	3.74	6.56	8.77**
practice	5.27	4.49	15.50	2.71	10.23	11.30**
Control group						
knowledge	10.43	3.91	11.80	3.74	1.37	2.91
practice	6.03	3.69	7.67	4.31	1.64	3.21

**At $p<0.01$

Table-2: describe the comparison of mean scores between pretest and posttest knowledge in experimental group. The mean posttest knowledge (19.93) was higher than the pretest mean (13.37) with the standard deviation (3.74) and the obtained't' value (t= 8.77) was significant at $p<0.01$. It also describes the comparison of mean scores between pretest and posttest practice. The mean posttest practice (15.50) was higher than the pretest mean (5.27) with the standard deviation (2.71) and the obtained't' value (t= 11.30) was significant at $p<0.01$. So the hypothesis1(H1) and hypothesis 2(H2) were accepted.

SECTION-6

Comparison of posttest level of knowledge and practice in experimental group and control group.

Table -4

Groups	Sample (n)	Posttest mean	Posttest SD	Mean difference	Independent 't' test
KNOWLEDGE					
Experimental group	30	19.93	3.74	6.56	8.415**
Control group	30	11.80	3.74	1.37	
PRACTICE					
Experimental group	30	15.50	2.71	0.23	8.425**
Control group	30	7.67	4.31	1.64	

** At P<0.01

Table 3 shows comparison of posttest knowledge and practice in control group and experimental group. The calculated't' value was more than the table value at 0.01 level, which implies that there was a significant difference at 0.01 level. So the hypothesis 2 were accepted.

SECTION-7

This section deals with correlation between the post test knowledge and practice in experimental group and control group.

Table-5

Correlation between the post test knowledge and practice.

Post test	Correlation
Experimental group Knowledge Practice	0.337**
Control group Knowledge Practice	0.076

**at $p<0.01$

Table 5 describe correlation between knowledge and practive of post test. The investigator found that there was a significant relationship (0.377**) between the post test level of knowledge and practice in experimental group. So, the hypothesis 3(H_3)were accepted.

SECTION-8

Association of pretest level of knowledge with selected demographic variables in experimental group and control group.

Table-6

Demographic variables	Experimental (n=30)				Control (n=30)			
	Adequate	Moderately adequate	Inadequate	Chi square	Adequate	Moderately adequate	Inadequate	Chi square
1. AGE								
a. 30-40 years	0	1	0		0	0	5	
b. 41-50 years	0	2	1	1.984	1	2	3	6.427
c. above 50 years	3	11	12		0	5	14	
2. SEX								
a. Male	1	7	6	0.278	0	3	7	
b. Female	2	7	7		1	4	15	0.808
3.MARITAL STATUS								
a. Married	2	11	11		1	7	19	
b. Unmarried	0	0	1	2.731	0	0	2	1.212
c. widow	1	3	1		0	0	1	
4 .RELIGION								
a. Hindu	3	13	11		1	7	19	
b. Christian	0	1	1	1.621	0	0	2	1.212
c. Muslim	0	0	1		0	0	1	
5. EDUCATIONAL STATUS								
a. Illiterate	1	4	6		1	1	6	
b. Primary education	1	9	6		0	4	6	5.922
c. Higher secondary	1	0	1	6.541	0	2	6	
d. Graduate or above	0	1	0		0	0	4	
6.OCCUPATION								
a. Business	0	2	0		0	2	3	
b. Government	0	1	1	6.133	0	1	2	2.327
c. Cooli	3	8	6		0	1	6	
d. House wife	0	3	6		1	3	11	

7. INCOME OF THE FAMILY PER MONTH								
a. Rs 3000-5000	2	10	11		0	1	5	
b. Rs5000-10000 /-	1	4	1	3.270	1	5	13	0.964
c. Above Rs 10000 /-	0	0	1		0	1	4	
8. AREA OF LIVING								
a. Urban	3	13	11	0.879	0	1	6	
b. Rural	0	1	2		1	6	16	0.816
9. DURATION OF DIABETES MELLITUS								
a. Less than 5 years	0	1	1		0	1	9	
b. 5-10 years	3	7	10	4.310	1	5	10	2.708
c. Above 10 years	0	6	2		0	1	3	
10. DURATION OF TAKING INSULIN INJECTION								
a. Less than 5 years	1	4	10		1	5	16	
b. 5-10 years	2	5	1	9.294	0	2	5	0.784
c. Above 10 years	0	5	2		0	0	1	
11. DIETARY PATTERN								
a. Vegetarian	0	1	1	0.241	0	2	0	
b .Non vegetarian	3	13	12		1	5	22	7.041
12. EXERCISE								
a. Yes	0	2	1	0.696	1	1	9	
b. No	3	12	12		0	6	13	3.408

Table -6 above the table shows that there was no significant association between of pretest level of knowledge. Therefore the hypothesis 4 was rejected.

SECTION-9

Association of posttest level of knowledge with selected demographic variable in experimental and control group.

Table -7

Demographic variables	Experimental (n=30)				Control (n=30)			
	Adequate	Moderately adequate	Inade quate	Chi square	Adeq uate	Moderately adequate	Inade quate	Chi square
1. AGE								
a. 30-40 years	1	0	0		0	1	4	
b. 41-50 years	3	0	0	1.67	0	3	3	2.410
c. above 50 years	18	5	3		2	7	10	
2. SEX								
a. Male	11	2	1	0.402	0	5	5	
b. Female	11	3	2		2	6	12	1.845
3.MARITAL STATUS								
a. Married	18	4	2		2	11	14	
b. Unmarried	0	0	1	9.639	0	0	2	2.549
c. widow	4	1	0		0	0	1	
4 .RELIGION								
a. Hindu	19	5	3		1	9	17	
b. Christian	2	0	0	1.212	1	1	0	9.217
c. Muslim	1	0	0		0	1	0	
5.EDUCATIONAL STATUS								
a. Illiterate	9	1	1		0	1	7	
b. Primary education	10	4	2		2	4	4	
c. Higher secondary	2	0	0	2.610	0	5	3	9.497
d. Graduate or above	1	0	0		0	1	3	
6. OCCUPATION								
a. Business	2	0	0		0	3	2	
b. Government	2	0	0	3.674	0	2	1	
c. Cooli	13	3	1		0	1	6	6.086
d. House wife	5	2	2		2	5	8	

7. INCOME OF THE FAMILY PER MONTH								
a. Rs 3000-5000 /-	16	4	3		0	2	4	
b. Rs 5000-10000 /-	5	1	0	1.310	1	8	10	2.510
c. Above Rs 10000 /-	1	0	0		1	1	3	
8. AREA OF LIVING								
a. Urban	19	5	3	1.212	0	2	5	1.123
b. Rural	3	0	0		2	9	12	
9. DURATION OF DIABETES MELLITUS								
a. Less than 5 years	1	0	1		0	5	5	
b. 5-10 years	15	4	1	4.459	0	6	10	15.160 **
c. Above 10 years	6	1	1		2	0	2	
10.DURATION OF TAKING INSULIN INJECTION								
a. Less than 5 years	10	3	2		0	9	13	
b. 5-10years	7	1	0	1.616	1	2	4	16.332 **
c. Above 10 years	5	1	1		1	0	0	
11. DIETARY PATTERN								
a. Vegetarian	1	1	0	1.820	0	2	0	
b. Non vegetarian	21	4	3		2	9	17	3.701
12. EXERCISE								
a. Yes	3	0	0	1.212	0	2	9	
b. No	19	5	3		2	9	8	4.715

** At $p < 0.01$ level

Table 7: describes the association of selected demographic variables with posttest knowledge scores. There was a significant association of selected demographic variables such as duration of diabetes mellitus ($\chi 2 = 15.160$), duration of taking insulin ($\chi 2 = 16.332$) and posttest knowledge scores. So, the hypothesis 5 (H5) were accepted.

SECTION -10

Association of pretest level of practice with selected demographic variable in experimental and control group.

Table -8

Demographic variables	Experimental (n=30)				Control (n=30)			
	Adequate	Moderately adequate	Inadequate	Chi square	Adequate	Moderately adequate	Inadequate	Chi square
1. AGE								
a. 30-40 years	0	0	1		0	0	5	
b. 41-50 years	0	0	3	1.678	1	0	5	5.860
c. above 50 years	3	5	18		0	3	16	
2. SEX								
a. Male	3	2	9	3.811	1	0	9	
b. Female	0	3	13		0	3	17	3.519
3.MARITAL STATUS								
a. Married	3	4	17		1	2	24	
b. Unmarried	0	0	1	1.098	0	0	2	9.516
c. widow	0	1	4		0	1	0	
4 .RELIGION								
a. Hindu	2	4	21		1	2	24	
b. Christian	1	1	0	6.673	0	1	1	3.939
c. Muslim	0	0	1		0	0	1	
5.EDUCATIONAL STATUS								
a. Illiterate	1	1	9		0	0	8	
b. Primary education	2	4	10		1	1	8	
c. Higher secondary	0	0	2	2.610	0	0	8	11.000**
d. Graduate or above	0	0	1		0	2	2	
6. OCCUPATION								
a. Business	0	1	1		0	0	5	
b. Government	1	0	1	6.807	1	0	2	
c. Cooli	2	3	12		0	0	7	12.462**
d. House wife	0	1	8		0	3	12	

7. INCOME OF THE FAMILY PER MONTH								
a. Rs 3000-5000	2	3	18		0	0	6	
b. Rs 5000-10000 /-	1	2	3	2.372	1	1	17	6.656
c. Above Rs 10000 /-	0	0	1		0	2	3	
8. AREA OF LIVING								
a. Urban	3	5	19	1.212	0	0	7	
b. Rural	0	0	3		1	3	19	1.409
9. DURATION OF DIABETES MELLITUS								
a. Less than 5 years	0	0	2		0	2	8	
b. 5-10 years	3	4	13	2.652	1	1	14	2.635
c. Above 10 years	0	1	7		0	0	4	
10. DURATION OF TAKING INSULIN INJECTION								
a. Less than 5 years	2	1	12		1	3	18	
b. 5-10 years	1	3	4	4.755	0	0	7	1.678
c. Above 10 years	0	1	6		0	0	1	
11.DIETARY PATTERN								
a. Vegetarian	1	1	0	6.429	0	1	1	
b. Non vegetarian	2	4	22		1	2	25	3.832
12. EXERCISE								
a. Yes	0	0	3	1.212	0	2	9	
b. No	3	5	19		1	1	17	1.789

** At $p< 0.01$ level

Table 8: describes the association of selected demographic variables with pretest practice scores. There was a significant association of selected demographic variables such as education ($\chi 2 = 11.000$), occupation ($\chi 2 = 12.462$) and posttest knowledge scores. So, the hypothesis 6 (H6) were accepted.

SECTION-11

Association of posttest level of practice with selected demographic variable in experimental and control group

Table -9

Demographic variables	Experimental (n=30)				Control (n=30)			
	Favorable	Moderately favorable	unfavorable	Chi square	favorable	Moderately favorable	Unfavorable	Chi square
1. AGE								
a. 30-40 years	1	0	0		0	0	5	
b. 41-50 years	2	1	0	1.209	1	1	4	5.169
c. above 50 years	16	6	4		0	2	17	
2. SEX								
a. Male	10	1	3	4.511	1	0	9	
b. Female	9	6	1		0	3	17	3.519
3.MARITAL STATUS								
a. Married	15	5	4		1	2	24	
b. Unmarried	0	1	0	4.462	0	0	2	9.516
c. widow	4	1	0		0	1	0	
4 .RELIGION								
a. Hindu	16	7	4		1	3	23	
b. Christian	2	0	0	1.930	0	0	2	9.217
c. Muslim	1	0	0		0	0	1	
5. EDUCATIONAL STATUS								
a. Illiterate	5	2	4		0	1	7	
b. Primary education	12	4	0		1	1	8	4.029
c. Higher secondary	1	1	0	9.064	0	0	8	
d. Graduate or above	1	0	0		0	1	3	
6. OCCUPATION								
a. Business	2	0	0		0	0	5	
b. Government	1	0	1	12.462**	1	0	2	6.086
c. Cooli	12	3	2		0	0	7	
d. House wife	4	4	1		0	3	12	

7. INCOME OF THE FAMILY PER MONTH								
a. Rs 3000-5000 /-	14	6	3		0	0	6	
b. Rs 5000-10000 /-	5	1	0	7.891	1	2	16	1.846
c. Above Rs 10000 /-	0	0	1		0	1	4	
8. AREA OF LIVING								
a. Urban	18	6	3	1.617	0	0	7	
b. Rural	3	1	1		`1	3	19	1.123
9. DURATION OF DIABETES MELLITUS								
a. Less than 5 years	1	1	0	1.611	0	1	9	
b. 5-10 years	12	5	3		1	2	13	1.524
c. Above 10 years	6	1	1		0	0	4	
10. DURATION OF TAKING INSULIN INJECTION								
a. Less than 5 years	9	4	2	0.435	1	3	18	
b. 5-10 years	5	2	1		0	0	7	1.678
c. Above 10 years	5	1	1		0	0	1	
11.DIETARY PATTERN								
a. Vegetarian	2	0	0	1.241	0	1	1	
b. Non vegetarian	17	7	4		1	2	25	3.832
12. EXERCISE								
a. Yes	2	1	0	0.593	0	2	9	
b. No	17	6	4		1	1	17	1.789

** At $p< 0.01$ level

Table-9 describes the association of selected demographic variables with posttest practice scores. There was a significant association of selected demographic variables such as occupation ($\chi 2 = 12.462$, DF =4, $p<0.01$) and posttest practice scores. So, the hypothesis 7 (H7) were accepted.

CHAPTER –V

DISCUSSION

This chapter deals with the findings of the study. The study was done to assess the effectiveness of Information, Education and Communication (IEC) package on knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in selected hospital at Trichy.

A Quasi - experimental design was used to conduct the study, knowledge and practice was assessed by using self-administered questionnaire and observational check list. Non probability convenience sampling technique was used. The study sample consisted of 60 patients with diabetes mellitus on insulin therapy. 30 patients were in control group and 30 patients were in experimental group. Using the above tool, data were collected and analyzed. The study findings revealed the followings.

The aim of this study was to assess the effectiveness of Information, Education and Communication package on knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy.

The first table shows the frequency and distribution of demographic characteristics of the study samples.

Majority of the samples were age above 50 years. Majority of the samples were female. Most of the samples were married. Most of the samples were Hindu. Majority of them were Coolie.

Majority of the sample family income were Rs.3000-5000/ per month. Most of them were living in urban areas.

Most of the samples had duration of diabetes mellitus 5-10 years. Majority of the samples had duration of taking insulin injection less than 5 years.

Most of the samples were non vegetarian. Majority of the samples were not doing exercise.

The first objective of the study was to assess the existing level of knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in experimental group and control group.

The investigator found out in control group the level of knowledge in pretest most of them were inadequate 22(73.3), and posttest 18(60) were inadequate. In control group the level of practice in pretest most of them were unfavorable practice 26(86.7), and posttest 26(86.7) were unfavorable practice. The findings extended suggested that is not reasonable to expect that improving knowledge and practice without intervention.

The investigator found out in experimental group the level of knowledge in pretest most of them 13(43.3) were inadequate. After nursing interventions most of them 22(73.3) were adequate,5(16.7) of them were moderately adequate and 3(10) of them were inadequate. The pretest practice 22(73.3) of them had unfavorable practice. After nursing interventions most of them 19(63.4) were favorable practice,7(23.3) of them were moderately favorable practice,4(13.3) of them were unfavorable practice.

The investigator found that an increasing level of knowledge and practice among diabetes mellitus patients after nursing interventions in experimental group. By analyzing knowledge of diabetes mellitus patients before nursing interventions initially, significant changes were found when comparing results obtained before and after nursing interventions. Before

interventions most of them had inadequate knowledge about self-care among diabetes mellitus. After nursing interventions majority of them had adequate knowledge. Through these nursing interventions the patients were able to cope with daily activities and to learn about diet, exercise, foot care, insulin administration. After nursing interventions the patients' posttest assessment score was increased.

The second objective of this study was to evaluate the effectiveness of Information Education and Communication package on knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in experimental group.

The mean posttest knowledge (19.93) was higher than the mean pretest knowledge (13.37) with SD =3.74 and obtained 't' value (t=8.774) was significant at 0.01 level, whereas the mean posttest assessment of practice was improved (mean=15.50, SD=2.71) than pretest assessment of practice and obtained 't' value (t=11.301) was significant at $p<0.01$ level.

The investigator found out that in control group that is not reasonable to expect improving level of knowledge and practice without nursing interventions. In experimental group all patients received Information Education and Communication package, which results posttest knowledge score was higher than pretest knowledge score and posttest practice mean score was higher than pretest practice mean score. When nurses are suggested to give advice regarding diabetes mellitus, they have a valuable opportunity to engage in health teaching concerning self-care among diabetes mellitus. This finding was supported by Kadayam G Gomathi (2012), Inoue M(1), Takahashi M, Kai (2010).

As there was significant difference on level of knowledge and practice between control group and experimental group. So, the first hypothesis (H_1) was accepted and Hypothesis 2 (H2) was accepted.

The third objective of this study was to find out the correlation between the posttest level of knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in experimental group and control group.

There was a positive correlation between posttest knowledge and practice. The present study also concluded that the level of knowledge and practice were improved after Information Education and Communication package.

The reason for this result was increased awareness among patients after receiving Information Education and Communication package. This finding was supported by Kadayam G Gomathi (2012). As there was significant relationship between the posttest level of knowledge and practice regarding the self-care among diabetes mellitus patients on insulin therapy. So the hypothesis 3 (H3) was accepted.

The fourth objective of this study was to determine the association between selected demographic variables with pretest level of knowledge and also selected demographic variables with posttest level of knowledge regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.

The present study also concluded that there was no significant association of selected demographic variables with pretest level of knowledge regarding the self-care among diabetes mellitus patients on

insulin therapy in experimental group and control group. So, the hypothesis 4(H4) was rejected.

The present study also concluded that there was a significant association of selected demographic variables such as duration of diabetes mellitus and duration of taking insulin with posttest level of knowledge regarding the self-care among diabetes mellitus patients on insulin therapy in control group. These study were supported by Aust et.al (2009). So, the hypothesis 5(H5) was accepted.

The fifth objective of this study was to determine the association between selected demographic variables and pretest level of practice and also selected demographic variables and posttest level of practice regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.

The present study also concluded that there was a significant association of selected demographic variables such as educational status and occupation with pretest level of practice regarding the self-care among diabetes mellitus patients on insulin therapy in control group. So, the hypothesis 6(H6) was accepted.

The present study also concluded that there was a significant association of selected demographic variables such as dietary pattern with posttest level of practice regarding the self-care among diabetes mellitus patients on insulin therapy in experimental group and control group.

These findings were supported by Khattab M.et.al (2009)

The reason for this result, patient were educated and had favorable practice by IEC package in experimental group. As there was significant association of selected demographic variables with posttest level of practice regarding the self-care among diabetes mellitus on insulin therapy. So, the hypothesis 7 (H7) was accepted.

CHAPTER – VI

SUMMARY, CONCLUSION, IMPLICATION AND RECOMMENDATIONS

This chapter presents the summary of the study and conclusion drawn. It clarifies the limitation of the study, the implication and the recommendation in different areas like nursing practice, nursing education, nursing administration and nursing research.

SUMMARY OF THE STUDY

The purpose of the study was to assess the effectiveness of Information Education and Communication package regarding self-care among diabetes mellitus patients on insulin therapy. The conceptual model of this study was based upon the General System theory by Ludwig Von Bertalanffy (1968).

The study was conducted by using pretest and posttest method. The instrument used for data collection was knowledge questionnaire and observational checklist for practice. Non-probability convenience sampling technique was used to select the samples. Descriptive statistics (Frequency, Percentage, mean and standard deviation) and inferential statistics (Chi square and Paired‘t’ test and independent ‘t’ test) were used to test the hypothesis.

THE FOLLOWING OBJECTIVES WERE SET FOR THE STUDY

1. To assess the existing level of knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in experimental group and control group.

2. To assess the effectiveness of information education and communication package on knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in experimental group.
3. To correlate the posttest level of knowledge and practice regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.
4. To determine the association between selected demographic variables and pretest level of knowledge and also selected demographic variables and posttest level of knowledge regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.
5. To determine the association between selected demographic variables and pretest level of practice and also selected demographic variables and posttest level of practice regarding self-care among diabetes mellitus patients on Insulin therapy in experimental group and control group.

MAJOR FINDINGS OF THE STUDY

1. Most of them age above 50 years 19(63.3) in control group and 26(86.7) in experimental group.
2. Most of them 20(66.7) in control group and 16(53.3) in experimental group were female.
3. Majority of them 27(90.0) in control group and 24(80.0) experimental group were married.
4. Both the groups, about 27(90.0) in control group and experimental group were Hindu.
5. Most of them 16(53.3) in experimental group were having primary education.
6. Most of them 15(50.0) in control group occupation were house wife and 17(56.6) experimental group occupation were Cooli.

7. Most of them 19(63.3) in control group income were Rs 5000-10000 and 23(76.7) experimental group income were Rs 3000-5000.
8. Majority of them 27(90.0) in experimental group were living in rural and 27(90.0) control group were living in urban.
9. Majority of them 23(76.7%) in control group have less than 5 years and 19(63.3%) in experimental group have 5-10 years of duration illness.
10. Most of them 15(50.0) in experimental group and 23(76.7) in control group were taking insulin.
11. Both the groups, about 28(93.3) were consuming non vegetarian dietary pattern.
12. Most of them 27(90.0) in experimental group and 19(63.3) in control group were not doing exercise.
13. During pretest, knowledge on self-care among patients with diabetes mellitus on insulin therapy in experimental group shows 43.3% of patients had inadequate knowledge, 46.7% had moderately adequate knowledge and 10 % had adequate knowledge. In posttest, 10.0% patients had inadequate knowledge, 16.7% had moderately adequate knowledge and 73.3% of had adequate knowledge in experimental group.
14. The practice regarding self-care among diabetes mellitus patients during pretest, 10% of patients had favorable practice, 16.7% of patients had moderately favorable practice and 73.3% of patients had unfavorable practice. In posttest, 63.4% of patients had favorable practice, 23.3% of patients had moderately favorable practice and 13.3% of patients had unfavorable practice in experimental group.
15. There were no significant association between selected demographic variables and their pretest level of knowledge scores.

16. There was significant association between selected demographic variables such as duration of diabetes mellitus and duration of taking insulin and posttest level of knowledge scores
17. There was significant association between selected demographic variables such as educational status and occupation and pretest level of practice scores.
18. There was significant association between selected demographic variables such as dietary pattern and posttest level of practice score.

CONCLUSION

The following conclusions were derived based on the findings,

The knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy was inadequate knowledge and unfavorable practice during pretest. The study showed that Information, Education and Communication was effective an improving knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy. So the result reveals that there is a positive relationship between knowledge and practice.

IMPLICATION

The findings of this study had several implications on nursing practice, nursing education, nursing administration and nursing research.

NURSING PRACTICE

Diabetes self-care requires the patient to make many dietary and lifestyle modifications supplemented with the supportive role of healthcare staff for maintaining a higher level of self-confidence leading to a successful behavior change.

The nurse, health professionals and health practitioners can able to make significant contributions to promote health status of patients. The nurse can educate regarding diabetic diet and exercise regularly. The study brings a positive effect on the health status of patients.

Education on self-care among patients with diabetes mellitus is a safe and effective intervention. These study findings will create awareness among the nurse about self-care among diabetes mellitus patients. It helps the nurses to understand the effectiveness of teaching regarding self-care among patients with diabetes mellitus.

NURSING EDUCATION

The result of the study will help the nurses to enlighten their knowledge on importance of educating the patients with diabetes mellitus and their family members.

This study would help the student nurses to understand the importance of education on self-care among diabetes mellitus. In-service education can be given to the nursing personnel regarding knowledge and practice on self-care among patients with diabetes mellitus.

Nurse educators can encourage the student nurse to learn skills in demonstrating foot care and insulin administration. Nursing education should emphasize the concept of involving the students to give quality nursing care with efficient resources in hospital.

NURSING ADMINISTRATION

The study findings give awareness to the nurses that Information, Education and Communication package is an effective tool for teaching that can save one’s time and energy. Imparting knowledge regarding self-care

among patients with diabetes mellitus can reduce the risk and it can improve the health and wellbeing of the patients. Inadequate practice on self-care among patients with diabetes mellitus can be identified and appropriate teaching can be provided. Information, Education and Communication package can be implemented in the community settings where the follow up regarding self-care among patients with diabetes mellitus is essential.

Nurse administrators can make a policy decision to teach self-care among diabetes mellitus patients for effective wellbeing and importance of self-care on diabetes mellitus through posters, charts, pamphlets and handout.

NURSING RESEARCH

The finding of this study helps to motivate the nurses to conduct research on diabetes mellitus in future.

Evidence–based nursing practice must take higher profile in order to increase awareness on self-care among patients with diabetes mellitus.

LIMITATION

1. The study was done on patients with diabetes mellitus on insulin therapy.
2. The patients were not randomly assigned.
3. The convenience sampling restricts the generalization.
4. The study sample is too small. Hence we cannot generalize the findings.

RECOMMENDATIONS

On the basis of study findings, following recommendations were suggested

1. A pre experimental study can be conducted to evaluate the effectiveness of computer assisted instruction on self-care among diabetes mellitus patients on insulin.
2. A quasi experimental study can be conducted to assess the effectiveness of self-instructional module on knowledge regarding management of Diabetes mellitus.
3. A study can be conducted to assess the Effectiveness of self-instructional module on knowledge and practice of Diabetic diet among patient on Type 2 diabetes mellitus.
4. A quasi experimental study can be conducted to assess the effectiveness of structured teaching programme on the knowledge and practice on prevention of diabetic foot ulcer among diabetes mellitus patients
5. A study can be conducted to assess the effectiveness of structured teaching programme on prevention of complications among patients with diabetes mellitus.

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APPENDIX-A

a) LETTER REQUESTING FOR VALIDATION

From

Ms.S.DEVI,
II yr. M.Sc., (N),
Dr. G. Sakunthala College of Nursing,
Trichy.

To

Respected Madam,

Sub: Letter requesting opinion and suggestion from experts for establishing content validity of the tools.

I am a final year M.Sc., Nursing student of Dr. G. Sakunthala College of Nursing. As part of my course I am doing a study on the topic mentioned below.

"A quasi experimental study to evaluate the effectiveness of information education and communication package on knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in selected hospital at Trichy ".

May I request you to give your valuable suggestions regarding the appropriateness of the tool.

Thanking you in anticipation.

Yours Faithfully,

S.DEVI

b) LETTER SEEKING PERMISSION TO CONDUCT THE RESEARCH STUDY

From

The Principal,

Dr. G. Sakunthala College of Nursing,

Trichy-5.

To

The Director,

GVN Hospital,

Singarathoppu,

Trichy.

Respected Sir,

Sub: Requesting For Permission to Conduct a Research Study

This is to Introduce Mr.S.DEVI, a II Year M.Sc., Nursing Student of Dr. G. Sakunthala College of Nursing, Trichy. She is to conduct a Research Project which is to be submitted to Dr. MGR Medical University in Partial Fulfillment of the University Requirement for the award of Master Degree of Nursing.

TOPIC : "A quasi experimental study to evaluate the effectiveness of information education and communication package on knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in selected hospital at Trichy**"**

The Student is interested in Conducting his Study among out patients in your hospital. I shall be obliged if youkindly Grant Permission for Conducting his Study in Your Esteemed Hospital.

Thanking You.

Date: Yours Sincerely,

(PRINCIPAL)

Place:

c) LETTER SEEKING PERMISSION TO CONDUCT THE RESEARCH STUDY

From

The Principal,
Dr. G. Sakunthala College of Nursing,
Trichy-5.

To

The Director,
DR.G.Viswanwthan specialty hospital.
Trichy.

Respected Sir,

Sub: Requesting For Permission to Conduct a Research Study

This is to Introduce Mr.S.DEVI, a II Year M.Sc., Nursing Student of Dr. G. Sakunthala College of Nursing, Trichy. She is to conduct a Research Project which is to be submitted to Dr. MGR Medical University in Partial Fulfillment of the University Requirement for the award of Master Degree of Nursing.

TOPIC: **"**A quasi experimental study to evaluate the effectiveness of information education and communication package on knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in selected hospital at Trichy''

The Student is interested in Conducting his Study among out patients in your hospital. I shall be obliged if youkindly Grant Permission for Conducting his Study in Your Esteemed Hospital.

Thanking You.

Date: Yours Sincerely

Place:

d) LETTER GRANTING PERMISSION TO CONDUCT RESEARCH STUDY

From

The Director,
GVN Hospital,
Singarathoppu,
Trichy.

To

The Principal,
Dr.G.Sakunthala College of Nursing,
Trichy-5.

Respected madam,

Sub: Permission to conduct study in GVN Hospital.

MS.S.Devi, M.Sc., Nursing student of Dr. G. Sakunthala College of Nursing, is granted permission to do his project among diabetes mellitus patients on insulin therapy.

Thanking you,

Yours Sincerely,

e) REQUISITION LETTER TO MEDICAL GUIDE

From

Ms.S.Devi,
II yr. M.Sc., (N),
Dr. G. Sakunthala College of Nursing,
Trichy.

To

Dr. Baskaran, M.D.,Gen med.,
G.V.N. Hospital,
Trichy.

Respected madam,

Sub: Requesting permission for the guidance to conduct the study.

I am II year M.Sc., Nursing student of Dr. G. Sakunthala College of nursing, Trichy. I would like to conduct a study as a part of partial fulfillment for the degree of Masters in Nursing. The statement of the problem is "A quasi experimental study to evaluate the effectiveness of information education and communication package on knowledge and practice regarding self-care among diabetes mellitus patients on insulin therapy in selected hospital at Trichy''

I humbly request you to give me guidance and suggestions for conducting my study.

Thanking you in anticipation

Yours sincerely,

S.DEVI

APPENDIX-B

LIST OF EXPERTS CONSULTED FOR THE CONTENT VALIDITY OF RESEARCH TOOL

Mrs. PUNITHAVATHY, M.Sc.(N)
Principal,
Thanthai Rover College of nursing
Perambalur

Mrs. FERMINA. J. M.Sc.(N)
Principal,
Nehru College of nursing
Trichy.

Mrs. REJINA RANI, M.Sc.(N)
Principal,
Doctors College of nursing
Pudukkottai

Mrs. BUVANA, M.Sc.(N)
Reader,
Gokulam College of Nursing
Salem.

Mrs.K.S. PUSHPALATHAM.Sc. (N)
Associate professor
Shanmuga College of Nursing
Salem.

APPENDIX-C

PART-IDEMOGRAPHIC VARIABLES

1. AGE

a . 30-40 years

b . 41-50 years

c . Above 50 years

2. SEX

a. Male

b. Female

3 .MARITAL STATUS

a. Married
b. Unmarried
c. widow

4 .RELIGION

a. Hindu

b. Christian

C.Muslim

5. EDUCATIONAL STATUS

a. Illiterate

b. Primary education

c. Higher secondary

d. Graduate or above

6. OCCUPATION

a. Business
b. Government
c. coolie
d. house wife

7. INCOME OF THE FAMILY PER MONTH

a. RS 3000-5000 /-

b. Rs 5000-10000 /-

c. Above Rs 10000 /-

8. AREA OF LIVING

a. Urban

b. Rural

9. DURATION OF DIABETES MELLITUS

a. Less than 5 years

b. 5-10 years

c. Above 10 years

10. DURATION OF TAKING INSULIN INJECTION

a. Less than 5 years

b. 5-10 years

c. Above 10 years

11. DIETARY PATTERN

a. Vegetarian

b. Non vegetarian

12. EXERCISE

a. Yes

b. No

PART II - KNOWLEDGE QUESTIONNAIRE REGARDING SELFCARE

1. What do you understand by the term diabetes mellitus?

a. Increased in blood sugar level & blood cholesterol level.

b. Decreased in blood sugar level.

c. Increased in blood sugar level.

2. Who will be the person's more risk to develop diabetes mellitus?

a. Obesity, age over 30 years,

b. family history of diabetes.

c. All of the above

3. What are all the signs & symptoms of diabetes mellitus?

a. Polyuria, Polyphagia, nausea, vomiting, fatigue

b. Polyuria, Polyphagia, polydipsia, weight loss, ketoacidosis

c. Polyphagia, diarrhea, weight gain, Polyuria, polydipsia.

4. What is the normal blood sugar level?

a. 80-110 mg/dl

b. 70-120 mg/dl

c. 80-140 mg/dl

5. Which is the hormone defect cause of diabetes mellitus?

a. Thyroxin

b. Insulin

c. Growth hormone

6. What is the main aim of diet pyramid?

a. Control of blood pressure and blood sugar level

b. Control of blood sugar level and heart problems

c. Control blood sugar level and maintain health

7. Which is the important advice given to diabetes mellitus patients?

a. Diet, exercise, foot care, taking regular medication.

b. Carbohydrate diet, foot care, exercise, dry fruits.

c. Fruits, carbohydrate diet, nuts, taking regular medication

8. What type of food items you include in your diet?

a. Green leafy vegetables, whole grains, fruits, nuts.

b.Vegetables, dry fruits, fat, carbohydrate diet

C.Protein foods, sugar, fruits, meat

9. What type of food items you should avoid in your diet?

a. Unskimmed milk, ghee, sugar, meat, oily foods

b. Green leafy vegetables, milk, fruits, whole grains

c. Vegetables, protein foods, fruits, whole grain

10. What type of fruits you can include in your diet?

a. Guava, orange, apple

b. Apple, mango, banana

c. jack fruit, orange, banana

11. What types of fruits you should avoid in your diet?

a. Mango, jack fruit, grape fruits.

b. Orange, apple, guava, grape fruits

c. Citrus fruits, dry fruits, orange, apple

12. What is the main purpose of foot care?

a. To prevent foot infection and monitor foot problem

b. Maintain the skin integrity and personal hygiene

c. To prevent communicable disease and foot infection

13. What are the causes for foot ulcers?

a. Peripheral neuropathy, peripheral vascular disease

b.Trauma, taking regular treatment on his/her own

C.Peripheral neuropathy, taking regular treatment, trauma

14. While washing the feet the water should be?

a. Hot water

b. Warm water

c. Cold water

15. What is the reason for cold feet?

a. Less blood circulation to the feet

b. Loss of sensation

c. Injury to the feet.

16. How many times will you do foot exercise per day?

a. Once a day

b. Twice a day

c. Three times a day

17. Which one is the benefit of exercise for patients with diabetes mellitus?

a. Reduction of blood pressure and improvement in glycemic control, improvement of body weight
b. Reduce the weight, improvement on glycemic controls, and maintains the good health
c. Improvement in glycemic control, reduce the weight and reduction of blood pressure

18. What are all the sites for the administration of insulin?

a. Arms, thigh, buttocks, abdomen

b. Thigh, buttocks, abdomen, vein

c. Buttocks, arms, vein, abdomen

19. How to dispose the insulin needle after use?

a. Burning

b. Puncture proof container

c. Burial

20. What are the common symptoms of excessive insulin therapy?

a. Decreased blood sugar level, giddiness, lipoatrophy

b. Increased blood sugar level, nausea, vomiting

c. decreased blood sugar level and blood pressure, giddiness

21. What is the deleterious effect after insulin therapy?

a. Weight gain, hypoglycemia

b. Weight loss, hyperglycemia

C. Weight gain, hyperglycemia

22. When does the patient take insulin injection?

a. 1 hour before food

b. 30 minutes before food

c. 3o minutes after food

23. Why the site of injection must be rotated?

a. To prevent infection.

b. To prevent wound formation.

c. To prevent lipo hypertrophy.

24. What are the common symptoms of hypoglycemia?

a. Increased blood sugar level, decreased heart rate, and decreased oxygen in blood.
b. Decreased oxygen content in blood, decreased blood sugar level, giddiness.
c. Increased blood sugar level, increased heart rate, and decreased oxygen in blood.

25. What will be the complication of diabetes mellitus?

a. Retinopathy, nephropathy, neuropathy, ketoacidosis.

b. Heart failure, hypotension, retinopathy, nephropathy.

. c. Hypertension, nephropathy, neuropathy, liver failure.

PART – III

OBSERVATIONAL CHECK LIST

S.NO	CONTENT	YES	NO
I	**INSULIN ADMINISTRATION**		
1.	wash hands thoroughly		
2.	Always inspect insulin vial before using it		
3.	Select proper injection site and to follow the injection procedure		
4.	Clean the site with alcohol		
5.	Pinch up the area of skin before giving injection		
6.	Touch needle to skin and then push needle through skin		
7.	Inject commercial insulin needle at 90^{o} angle		
8.	After injecting insulin , leave needle in place for 5 seconds to ensure that all insulin has been injected		
9.	Hold alcohol pad in place for a few seconds but do not massage		
10.	Insulin syringe and pen , needles and lancets should be disposed according to local regulation		
11.	Keep thirty minutes time interval between insulin injection and food intake		
12.	Ensuring the insulin vial storage properly		
II	**FOOT CARE**		
13.	Wash the feet in warm water		
14.	Check the temperature before immersing the feet.		
15.	Dry the feet well especially between the toes.		

16.	Inspect the skin of the feet for breaks or red or swollen areas.		
17.	File the toenails rather than cutting them to avoid skin injury.		
18.	Keep the skin soft with moisturizing lotions; not apply it between the toes.		
19.	Does the feet exercise		
20.	Wear slippers.		

வடிவமைக்கப்பட்ட கேள்விப்படிவம்

பகுதி – 1

பொதுவான விவரங்கள்

குறிப்பு : பொருத்தமான இடங்களில டிக் குறியிடவும்

1.நோயாளியின் வயது

அ. 30-40 வயது ☐

ஆ. 41-50 வயது ☐

இ. ஐம்பது வயதிற்கு மேல் ☐

2.பாலினம்

அ. ஆண் ☐

ஆ. பெண் ☐

3. திருமணநிலை

அ. திருமணமானவர் ☐

ஆ. திருமணமாகதவர் ☐

இ. விதவை ☐

4. மதம்

அ. இந்து ☐

ஆ. கிறிஸ்த்துவம் ☐

இ. முஸ்லிம் ☐

5. நோயாளியின் கல்விநிலை

அ. கல்வி பயிலவில்லை ☐

ஆ. ஆரம்பகல்வி ☐

இ. மேல்நிலை கல்வி ☐

ஈ. பட்டபடிப்பு மற்றும் அதற்க்கு மேல் ☐

6. தொழில்

அ. தொழிலாளி ☐

ஆ. வியாபாரம் ☐

இ. விவசாயம் ☐

ஈ. இல்லத்தரசி ☐

7. குடும்ப மாதவருமானம்

அ. ரூ. 3000-5000 ☐

ஆ. ரூ.5001- 10,000 ☐

இ. 10,000ற்கு மேல் ☐

8. வாழும் இடம்

அ. கிராமம் ☐

ஆ. நகரம் ☐

9. எத்தனை வருடமாக உங்களுக்கு சர்க்கரை நோய் உள்ளது

அ. 5 வருடத்திற்கு குறைவாக ☐

ஆ. 6-10 வருடமாக ☐

இ. 10 வருடத்திற்கு மேல் ☐

10. எவ்வளவு நாட்களாக இன்சுலின் ஊசி போடுகிறீர்கள்

அ. 5 வருடத்திற்கு குறைவாக ☐

ஆ. 6-10 வருடமாக ☐

இ. 10 வருடத்திற்கு மேல் ☐

11. உணவு முறை

அ. சைவம் ☐

ஆ. அசைவம் ☐

12. உடற்பயிற்சி செய்வீர்களா

அ. ஆம் ☐

ஆ. இல்லை ☐

பகுதி-2

சர்க்கரை நோயாளிகளுக்கான அறிவு சார்ந்த கேள்விகள்

பின்வரும் விவரங்களை கவனமாக படித்து சரியான பதிலை தேர்ந்தெடுக்கவும்

1. சர்க்கரை நோய் பற்றி உங்களுக்கு தெரிந்தது என்ன?

    1. இரத்தத்தில் சர்க்கரையின் அளவு அதிகரித்தல்.
    2. இரத்தத்தில் சர்க்கரையின் அளவு மற்றும் கொழுப்பின் அளவு அதிகரித்தல்.
    3. இரத்தத்தில் சர்க்கரையின் அளவு குறைதல்.

2. யாருக்கெல்லாம் சர்க்கரை நோய் அதிகமாக ஏற்பட வாய்பு உள்ளது?

    1. உடல் பருமன், 30 வயது மேல் உள்ளவர்களுக்கு.
    2. பரம்பரையில் சர்க்கரை நோய் இருப்பவர்களுக்கு.
    3. மேற்கூறிய அனைத்தும்.

3. சர்க்கரை நோயின் அறிகுறிகள் யாவை?

    1. அடிக்கடி சிறுநீர் கழித்தல்,அதிகமாக பசி எடுத்தல், அதிக தாகம்,சோர்ந்து போகுதல்.
    2. அதிகமாக பசி எடுத்தல், வயிற்றுபோக்கு, உடல் எடை அதிகரிப்பு, அடிக்கடி சிறுநீர் கழித்தல்.
    3. உடல் எடை குறைவு, அதிக தாகம், வயிற்றுபோக்கு, அதிகமாக பசி எடுத்தல்.

4. இரத்தத்தில் சர்க்கரையின் அளவு எவ்வளவு இருக்கவேண்டும்?

    1. 80-110 மில்லி கிராம் டெசி லிட்டர்.
    2. 70-120 மில்லி கிராம் டெசி லிட்டர்.
    3. 80-140 மில்லி கிராம் டெசி லிட்டர்.

5. எந்த ஹார்மோன் காரணத்தினால் சர்க்கரை நோய் வரும்?

1. தைராக்ஸின்
2. இன்சுலின்
3. வளர்ச்சி ஹார்மோன்

6. சர்க்கரை நோயாளிகளுக்கு கொடுக்க வேண்டிய முக்கியமான அறிவுரைகள் யாவை?

1. உணவு முறைகள், உடற்பயிற்ச்சி, பாத பராமரிப்பு, தொடர்ச்சியாக மருந்துகளை எடுத்துக் கொள்ளுதல்
2. பாத பராமரிப்பு, உடற் பயிற்ச்சி, கார்போஹைட்ரேட் உணவு வகைகள், பழங்கள்.
3. பழங்கள், உடற் பயிற்ச்சி, கார்போஹைட்ரேட் உணவு வகைகள், தொடர்ச்சியாக மருந்துகளை எடுத்துக் கொள்ளுதல்

7.இரத்தத்தில் சர்க்கரையின் அளவு குறையும் போது ஏற்படும் அறிகுறிகள் என்ன?

1. இரத்தத்தில் சர்க்கரையின் அளவு அதிகரித்தல்,இதயத்துடிப்பு குறைதல்,இரத்தத்தில் ஆக்ஸிஜன்அளவு குறைதல்.
2. இரத்தத்தில் ஆக்ஸிஜன்அளவு குறைதல், இரத்தத்தில் சர்க்கரையின் அளவு குறைதல், மயக்கம்.
3. இரத்தத்தில் சர்க்கரையின் அளவு அதிகரித்தல்,இதயத்துடிப்பு அதிகரித்தல்,இரத்தத்தில் ஆக்ஸிஜன்அளவு குறைதல்

8. சர்க்கரை நோயினால் வரும் பின்விளைவுகள் என்ன?

1. இரத்த சர்க்கரை அளவு குறைதல்,கண் பாதிப்பு,நரம்பு பாதிப்பு, சிறுநீரக பாதிப்பு.
2. இதய பாதிப்பு,இரத்த அழுத்தம் குறைதல்,கண் பாதிப்பு, சிறுநீரக பாதிப்பு.
3. இரத்த அழுத்தம் அதிகரித்தல், நரம்பு பாதிப்பு, சிறுநீரக பாதிப்பு,கல்லீரல் பாதிப்பு.

9. உணவு பிரமிடின் முக்கிய குறிக்கோள் என்ன?

    1. இரத்த அழுத்தம் மற்றும் இரத்தத்தில் சர்க்கரையின் அளவை கட்டுப்படுத்துதல்.
    2. இரத்த அழுத்தம் மற்றும் இதய கோளாறுகள் வராமல் தடுப்பதற்க்கு.
    3. இரத்தத்தில் சர்க்கரையின் அளவை கட்டுப்படுத்துதல் மற்றும் உடல் நிலையை பராமரித்தல்

10. உணவில் சேர்த்துக் கொள்ள வேண்டிய உணவு வகைகள் யாவை?

    1. தானிய வகைகள்,பருப்பு வகைகள்,கீரை வகைகள்,காய்கறி வகைகள்.
    2. காய்கறிகள்,உலர்ந்த பழங்கள்,கொழுப்பு,கார்போ ட்ரேட் உணவு வகைகள்.
    3. புரதம் நிறைந்த உணவு வகைகள்,சர்க்கரை,பழங்கள்,இறைச்சி.

11. உணவில் தவிர்க்க வேண்டிய உணவு வகைகள் யாவை?

    1. பதப்படுத்தபடாத பால்,நெய்,சர்க்கரை,இறைச்சி,எண்ணெய் நிறைந்த உணவு பொருட்கள்.
    2. கீரை வகைகள்,பால்,பழங்கள்,தானிய வகைகள்.
    3. காய்கறிகள்,புரதம் நிறைந்த உணவு வகைகள்,பழங்கள்,தானியங்கள்.

12. நீரிழிவி நோயாளிகள் சேர்த்துக் கொள்ள வேண்டிய பழவகைகள் யாவை?

    1.ஆப்பிள்,ஆரஞ்சு,கொய்யாப்பழம்.
    2.மாம்பழம்,ஆப்பிள்,வாழைப்பழம்.
    3.ஆரஞ்சு,பலாப்பழம்,வாழைப்பழம்.

13. நீரிழிவி நோயாளிகள தவிர்க்க வேண்டிய பழ வகைகள் யாவை?

    1. மாம்பழம்,பலாபழம்,திராட்சை பழம்.
    2. ஆரஞ்சு, ஆப்பிள்,கொய்யாப்பழம்.
    3. உலர்ந்த பழங்கள்,ஆப்பிள்,ஆரஞ்சு.

14.பாத பராமரிப்பின் முக்கிய நோக்கங்கள் என்ன?

1. பாதத்தில் நோய் தொற்றுதலையும் மற்றும் பாதகோளாறுகளையும் தடுப்பதற்கு
2. தோலின் தன்மையை பராமரிப்பதற்கு மற்றும் சுய சுத்தத்திற்காகவும்.
3. தொற்றுநோயை தடுப்பதற்கு

15.பாத புண் வருவதற்கான காரணங்கள் என்ன?

1. நரம்பு நேரய், பெரிய இரத்தநாள நோய்
2. காலில் அடிபடுவதினால், சுயமாக மருந்துகளை எடுத்துகொள்வதனால்
3. நரம்பு நேரய், சுயமாக மருந்துகளை எடுத்துகொள்வதனால்

16.பாதத்தை கழுவும் நீர் எப்படி இருக்க வேண்டும்?

1. சூடான தண்ணீர்
2. மிதமான தண்ணீர்
3. குளிர்ந்த தண்ணீர்

17.கால் விரல்கள் குளிர்ந்த நிலையில் இருப்பதற்க்கு காரணம் என்ன?

1. பாதத்தில் இரத்த ஓட்டம் குறைவு.
2. பாதத்தில் உணர்ச்சி இல்லாமை.
3. பாதத்தில் அடிபடுவதினால்.

18.ஒரு நாளைக்கு எத்தனைமுறை பாதஉடற்பயிற்ச்சி செய்ய வேண்டும்?

1. ஒரு முறை
2. இரண்டு முறை
3. மூன்று முறை

19.சர்க்கரை நோயாளிகள் உடற்பயிற்ச்சி செய்வதனால் பயன்கள் யாவை?

1. இரத்த அழுத்தம் குறைதல்,இரத்தத்தில் சர்க்கரையின் அளவை கட்டுபடுத்துதல்,உடல் எடையை அதிகரித்தல்.
2. உடல் எடை குறைதல்,இரத்தத்தில் சர்க்கரையின் அளவை கட்டுபடுத்துதல்,உடல் நலத்தை பராமரித்தல்.

3. இரத்ததில் சர்க்கரையின் அளவை கட்டுப்படுத்துதல்,உடல் எடை குறைதல், இரத்த அழுத்தம் குறைதல்.

20. சர்க்கரை நோயாளிகள் எப்போது இன்சுலின் ஊசி போட்டுக்கொள்ள வேண்டும்?

1. சாப்பிடுவதற்க்கு 1 மணி நேரத்திற்கு முன்.
2. சாப்பிடுவதற்க்கு 30 நிமிடத்திற்கு முன்.
3. சாப்பிடுவதற்க்கு 30 நிமிடத்திற்கு பின

21.உடலில் எந்தெந்த இடத்தில் இன்சுலின் ஊசி போட்டுக்கொள்ளலாம்?

1. கை பகுதி,தொடைப் பகுதி,இடுப்பு பகுதி,வயிற்றுப் பகுதி.
2. தொடைப் பகுதி,இடுப்பு பகுதி,வயிற்றுப் பகுதி,நரம்பு.
3. இடுப்பு பகுதி,வயிற்றுப் பகுதி,நரம்பு, கை பகுதி.

22.இன்சுலின் ஊசி ஒரே இடத்தில் போடாததற்கான காரணம் என்ன?

1. நோய்கிருமி தொற்றுதலை தடுக்க
2. காயம் ஏற்படுவதை தடுக்க
3. கொழுப்பு கட்டி ஏற்படுவதை தடுக்க

23.மிக அதிகமான இன்சுலின் ஊசி மருந்து போடுவதனால் ஏற்படும் அறிகுறிகள் யாவை?

1. இரத்தத்தில் சர்க்கரையின் அளவு குறைதல்,மயக்கம்
2. இரத்தத்தில் சர்க்கரையின் அளவு அதிகரித்தல்,வாந்தி,குமட்டல்.
3. இரத்தத்தில் சர்க்கரையின் அளவு குறைதல்,இரத்த அழுத்தம் குறைதல்.

24.இன்சுலின் ஊசியை பயன்படுத்திய பிறகு ஊசியை எவ்வாறு அப்புறபடுத்த வேண்டும்?

1. எரித்தல் முறையில்
2. ஓட்டை இல்லாத குப்பைத்தொட்டி
3. புதைத்தல் முறையில்

25.இன்சுலின் ஊசி போடுவதனால் ஏற்படும் பின்விளைவுகள் யாவை?

1. உடல் எடை அதிகரித்தல்,இரத்தத்தில் சர்க்கரையின் அளவு குறைதல்.
2. உடல் எடை குறைதல்,இரத்தத்தில் சர்க்கரையின் அளவு அதிகரித்தல்.
3. உடல் எடை அதிகரித்தல்,இரத்தத்தில் சர்க்கரையின் அளவு அதிகரித்தல்.

PART I

SCORING KEY- KNOWLEDGE QUESTIONNAIRE

ITEM	A	B	C
1.	0	0	1
2.	0	0	1
3.	0	1	0
4.	0	0	1
5.	0	1	0
6.	1	0	0
7.	1	0	0
8.	1	0	0
9.	1	0	0
10.	1	0	0
11.	1	0	0
12.	1	0	0
13.	1	0	0
14.	0	1	0
15.	1	0	0
16.	1	0	0
17.	1	0	0
18.	1	0	0
19.	0	1	0
20.	1	0	0
21.	1	0	0
22.	0	1	0
23.	0	0	1
24	0	1	0
25.	1	0	0

PART II

SCORNG KEY- PRACTICE QUESTIONNAIRE

ITEM	YES	NO
1.	1	0
2.	1	0
3.	1	0
4.	1	0
5.	1	0
6.	1	0
7.	1	0
8.	1	0
9.	1	0
10.	1	0
11.	1	0
12.	1	0
13.	1	0
14.	1	0
15.	1	0
16.	1	0
17.	1	0
18.	1	0
19.	1	0
20.	1	0

APPENDIX - IV

INFORMATION EDUCATION AND COMMUNICATION PACKAGE ON SELFE CARE AMONG DIABETES ELLITUS

TEACHING GUIDE

Group	:	Diabetes mellitus patients
Venue	:	GVN Hospital
Time	:	45 minutes
Teaching method	:	Lecture cum discussion, demonstration
Language	:	English
Audiovisual Aids	:	power point presentation, pamphlets

General Objectives

The patients will be able to acquire knowledge and practice regarding self care among diabetes mellitus and develop skills in diabetes mellitus.

Specific Objectives

The patients will be able to

define diabetes mellitus

list out the classification of diabetes mellitus

enumerate the risk factors of diabetes mellitus

understand the signs and symptoms of diabetes mellitus

mention the investigation of diabetes mellitus

explain the self care management of diabetes mellitus

INTRODUCTION

Today increasing emphasis is placed on health, health promotion wellness and self care. Health is seen as resulting from a lifestyle, oriented towards, wellness. the result has been the evolution of a wide range of health promotion strategies including multiphase screening, genetic testing, life time health monitoring, environmental and mental health program risk reduction and nutrition and health education. A growing interest in self care skills is evidenced by the large number of health related publication designed for lay public people are increasingly knowledgeable about their health and take more interest and responsibility for their health and well being.

Specific Objectives	Time	Content	Teachers Activity	Learner's Activity
Define diabetes mellitus	2 min	**DEFINITION** Diabetes mellitus is a group of metabolic disease characterized by hyperglycemia resulting from defect in insulin secretion, insulin action or both. Diabetes is a chronic multisystem disease related to abnormal insulin production, impaired insulin utilization or both.	Defining and discussing	listening
List out the classification of diabetes mellitus	2min	**CLASSIFICATION OF DIABETES MELLITUS** 1. Type 1 diabetes mellitus (previously referred to as insulin- dependent diabetes mellitus) 2. Type 2 diabetes mellitus (previously referred to as non insulin dependent diabetes mellitus) 3. Gestational diabetes mellitus	Listing out with help of pamphlets	Listening

Understand the signs and symptoms	2min	**RISK FACTORS FOR DIABETES MELLITUS** 1. Family history of diabetes 2. Obesity 3. Race/ ethnicity 4. Age >45 years 5. Hypertension 6. History of gestational diabetes mellitus **CLINICAL MANIFESTATION** 1. Polyuria 2. Polydipsia 3. Polyphagia 4. Weight loss 5. Weakness 6. Fatigue 7. Ketoacidosis	Explaining with help of power point	Listening

		DIAGNOSTIC EVALUATION 1. Fasting plasma glucose 2. Random plasma glucose level 3. Two- hour OGTT Level 4. Urine for complete urinalysis and acetone 5. Funduscopic examination 6. Electro cardio gram 7. Doppler scan 8. Dental examination 9. Foot examination 10. Monitoring weight **MANAGEMENT** • DIET • PHYSICAL ACTIVITY • FOOT CARE • INSULIN ADMINISTRATION		

Explain the dietary management	10 min	**DIET:** It is important to know how many carbohydrates you eat at a meal. This information helps you determine how much insulin you should take with your meal to maintain blood sugar control. **GRAINS, BEANS AND VEGETABLES** Food like bread, grains, beans, rice and vegetables are at the bottom of the pyramid because they should serves at the foundation of your diet. As group these foods are loaded with vitamins, minerals and healthy carbohydrates. **VEGETABLES** Choose fresh or frozen vegetables without added fat or salts. You should for more darkgrean and deep yellow vegetables that do not have added sweeteners.	Explaining with help of pamphlets	Listening

		FRUITS Choose whole fruits more often than juices. Fruits have more fiber. Citrus fruits such as orange, grape fruit and best drink fruit juices that do not have added sweeteners or syrups. **FATS ALCOHOL AND SWEETS** You should limit your intake of fatty food especially those high in saturated fat such as cheese and butter. If you choose to drink alcohol, limit the amount and have it with a meal. Check with your health care provided about a safe amount for you sweets are high in fat and sugar free. 1. Eat sweets that are sugar free. 2. Always ask for the small serving size.		

		NUTRITIONAL MANAGEMENT OF DIABETES INCLUDES THE FOLLOWING GOALS 1. Providing all the essential food constituents necessary for op 2. Meeting energy needs 3. Achieving and maintaining a reasonable weight 4. Preventing wide daily fluctuation in blood glucose level with blood glucose level as close to normal as is safe and practical to prevent or reduce the risk for complication. 5. Decreasing serum lipid levels if elevated to reduce the risk for macro vascular disease.		

		THE FOLLOWING GUIDELINES MAY BE HELPFUL WHEN MAKING DIETARY RECOMMENTATION 1. Combining starchy food with protein and fat containing food tends to slow their absorption and lower the glycemic response. 2. In general eating foods that are raw and whole results in a lower glycemic response than eating chopped or cooked foods. 3. Eating whole fruit instead of drinking juice decrease the glycemic response, because fibre in the fruits low absorption. Adding foods with sugar to the diet may result in a lower glycemic response if these foods are eaten with foods that are more slowly absorbed.		Listening

Explain the physical activity	10 min	2.**PHYSICAL ACTIVITY** Regular consistent exercise is considered an essential part of diabetes and pre-diabetes management. Exercise increases insulin receptor site in the tissue and can have a direct effect on lowering the blood glucose level. It also contributes to weight loss, which also decrease insulin resistance. The therapeutic benefits of regular physical activity may result in a decreased need for diabetes medicines in order to reach target blood glucose levels. Regular exercise may also help reduce triglyceride and LDL cholesterol level, increase HDL, reduce blood pressure and improve circulation. **BENEFITS OF EXERCISE IN PATIENTS WIRH DIABETES MELLITUS** 1. Improvement in glycemic control with improvement in insulin sensitivity.	Explaining with help of power point	Listening

		2. Reduction of blood pressure. 3. Maintenance and improvement in body weight 4. Increased in vascular reactivity 5. Improvement of psychological well beings. **PATIENT AND FAMILY TEACHING GUIDE EXERCISE FOR PATIENT WITH DIABETES MELLITUS:** 1. Exercise does not have to vigorous to be effective. The blood glucose reducing effects of exercise can be attained with exercise such as brisk walking 2. The exercise selected should be enjoyable to faster regularity 3. The exercise session should have a warm up period and a cool down period. The exercise programe should be started gradually and		Listening

		increased slowly 4. The exercise is best done after meals, when the blood glucose level is rising 5. Exercise plan should be individualised for each patients and monitored by the health care provider 6. It is important to self monitor blood glucose level before, during and after exercise to determine the effect exercise has on blood glucose level at particular time of the day. • Before exercise if blood glucose is over 250mg/dl delay exercise or if patient insists on exercising, Reduce the intensity and duration by half. • Before exercise, If blood glucose is less than 100mg/dl, Eat a 10-15g carbohydrate snack. After 15-30mts retest blood glucose level. Do not exercise if less than 100mg/dl.		

		• Recheck blood glucose at the end of the exercise programe 7. Be alert to the possibility of delayed exercise induced hypoglycemia, which may occur several hours after the completion of exercise. 8. Taking a glucose lowering medication does not mean that planned or spontaneous exercise cannot occur. 9. it is important to compensate for extensive planned and spontaneous activity by monitoring blood glucose level to make adjustments in the insulin dose (if taken) and food intake. **4.FOOT CARE** The feet are essential for ambulation and merit attention even when people are confined to bed. Each foot contains 26 bones, 107 ligament, and 19 muscles. These structures function together for both standing and walking.		

Demonstrate the foot care	10 min	**PURPOSE** 1. To maintain the skin integrity 2. To prevent foot infection 3. To prevent odors 4. To assess or monitor foot problems **FOOT CARE** 1. Check your feet and toes every day. 2. Wash your feet and toes every day with warm water and mild soap. 3. Test the temperature of the water with your fingers or elbows before putting your feet in warm water. 4. Gently and thoroughly dry your feet particularly between your toes. 5. After bathing your feet soften dry skin with lotion, petroleum jelly, and oil. Do not put lotion between your toes.	Demonstration	listening

		6. File the toenails rather than cutting them to avoid skin injury. 7. Avoid sitting with legs crossed or standing in one position for long times. 8. If you smoke stop, if decreased blood flow to the feet.		
Demonstrate the insulin administration	10 min	**4.INSULIN ADMINISTRATION** Insulin is necessary for normal carbohydrate, protein and fat metabolism. People with type I diabetes mellitus do not produce enough of the hormone to sustain and therefore depend on exogenous insulin for survival. **INSULIN** Insulin is available in rapid, short, intermediate and long acting types that may be injected separately in the same syringe.	demonstrati on	Listening

		DISPOSAL Recapping, bending or breaking a needle increase the risk of needle stick injury and should be avoided. Insulin syringe and pens, needle and lancets should be disposed of according to local regulation. When community disposal programs are unavailable, used sharps should be placed in a puncture resident container. **PROCEDURE** 1.Wash hands thoroughly 2. Always inspect insulin bottle before using it. Make sure it is of proper type and concentration. Expiration date has not passed is in perfect condition. 3. If insulin solution is NPH or combination therapies they are Solution. The insulin bottle needle		

		to be gently rolled the hands to mix the insulin. 4.prepare insulin infection in same manner as for any injection 5. Select proper injection site and inject the following procedure for any subcutaneous injection. In sites where subcutaneous tissue is adequate, inject commercial insulin needle at90 degree angles. 6. After injecting insulin, leave needle in place for 5 seconds to ensure that all insulin has been injected. 7.hold alcohol pad in place for a few seconds but do not massage 8.destroy and dispose of single age syringe **PROBLEMS WITH INSULIN THERAPY** 1.Hypoglycemia 2.allergic reaction 3.lipodystrophy 4.somogyl effect are problem associated with insulin therapy		

		COMPLICATION SHORT TERM COMPLICATION 1.hypoglycemia 2.diabetic ketoacidosis LONG TERM COMPLICATION MACROVASCULAR DISEASE Coronary artery disease Peripheral vascular disease Cerebro vascular disease MICROVASCULAR DISEASE Retinopathy Nephropathy NEUROPATHIC DISEASE Importance and foot ulcer		Listening

SUMMARY

Till now we have discussed regarding definition, classification, risk factors, clinical manifestation, diagnostic evaluation, self care management including diet, exercise, foot care and insulin administration of diabetes mellitus. And also we have seen about control of diabetes mellitus we had demonstration of foot care and insulin administration.

பகுதி - 4

சர்க்கரை நோய் மற்றம் சிகிச்சை முறைகள்

தலைப்பு	:	சர்க்கரை நோய்
குழு	:	சர்க்கரை நோயாளிகள்
இடம்	:	ஜி.வி.என் மருத்துவமனை
காலம்	:	45 நிமிடங்கள்
கற்பிக்கும் முறைகள்	:	கற்பித்தல் மற்றும் கலந்துரையாடல்

பொதுவான நோக்கம்

அனைத்து சர்க்கரை நோயாளிகளும், சர்க்கரை நோய் மற்றும் சர்க்கரை நோய்கான சிகிச்சை முறைகளை பற்றி விளக்கமாக அறிந்து கொண்டு நடைமுறையில் பின்பற்றுதல்.

குறிப்பிட்ட நோக்கம்

சர்க்கரை நோயாளிகள் அறிந்து கொள்வது

சர்க்கரை நோய் என்றால் என்ன என்பதை விளக்குதல்

சர்க்கரை நோயின் வகைகளை பற்றிக் கூறுதல்

சர்க்கரை நோய் வருவதற்கான காரணங்களை விளக்குதல்

சர்க்கரை நோய் வருவதற்கான அபாய காரணிகளைப் பற்றி கலந்துரையாடல்

சர்க்கரை நோயின் அறிகுறிகளைப் பற்றிக் கூறுதல்

சர்க்கரை நோயினை கண்டறியும் முறைகளை விவரித்தல்

சர்க்கரை நோய்கான சிகிச்சை முறைகளை விளக்குதல்

நேரம்	குறிப்பிட்ட நோக்கம்	பொருளடக்கம்	கற்பிப்பவர்	கற்பவர் செயல்பாடு
2 நிமிடங்கள்	சர்க்கரை நோய் என்றால் என்ன என்பதை விளக்குதல்	சர்க்கரை நோய் என்பது நமக்கு இன்சுலின் சுரப்பதின் அளவு குறைவதாலும், கணையம், கல்லீரல் போன்றவை நோய்க்குட்பட்டு இருக்கும் நிலையில் சுரந்த இன்சுலின் சரிவர உபயோகப்படுத்தப்படாமல் இருப்பதாலும், இரத்தத்தில் சர்க்கரையின் அளவு அதிகமாகி hyperglycemia என்ற நிலை ஏற்படுகின்றது. இதையே நாம் சர்க்கரை நோய் அல்லது நீரிழிவு நோய் என்று கூறுகிறோம்.	விளக்குதல் மற்றும் கலந்துரையாடல்	கவனித்தல்
2 நிமிடங்கள்	சர்க்கரை நோயின் வகைகளை பள்ளிக் கூறுதல்	**சர்க்கரை நோயின் வகைகள் :** 1. முதல் வகை 2. இரண்டாம் வகை 3. முன்றாம் வகை **முதலாவதுவகை** **முதலாவதுவகை நீரிழிவானது** (Type I Diabetes IDDM Insulin Dependent Diabetes Mellitus) **குழந்தைகள், சிறுவர், சிறுமிகள், இளம் பருவத்தினர் ஆகியோருக்கு ஏற்படுகின்றது. இவர்களுக்கு இன்சுலின் கொண்டுதான் சிகிச்சை அளிக்கவேண்டும். ஏனென்றால் இவர்களது இன்சுலின் சுரப்பிகள் இன்சுலின் சுரக்கும் தன்மையை**	விளக்குதல் மற்றும் கலந்துரையாடல்	

		முற்றிலும் இழந்திருக்கின்றன. 10% வீதமான நீரிழிவு நோயாளிகள் வகை ஒன்றினால் பாதிக்கப்பட்டவர்களாவார்கள் இரண்டாவது வகை இரண்டாவது வகை நீரிழிவு (Type II-- NIDDM Non Insulin Dependent Diabetes Mellitus) இன்சுலின் சுரப்பிகள் போதியளவு இன்சுலின் சுரக்காதாலோ அல்லது அப்படி சுரக்கப்படும் இன்சுலினுக்கு எதிர்வினை ஏற்படுவதாலோ ஏற்படுகின்றது. இந்த வகை நீரிழிவு கிட்டத்தட்ட 90 வீதமான நோயாளிகளில் காணப்படுகிறது. மூன்றாவது வகை: மூன்றாவது வகையான கர்ப்பகால நீரிழிவானது 2 சதவீதம் முதல 4 சதவீதமான பெண்களுக்கு கர்ப்பகாலத்தின் போது ஏற்படுகிறது. குழந்தை பிறந்தவுடன் இது மறைந்து விடுகிறது. இருந்தபோதிலும், பிறகு வாழ்க்கையில் குழந்தைக்கும் தாய்க்கும் நீரிழிவு உண்டாகும் வாய்ப்பை அதிகரிக்கக் கூடும்		கவனித்தல்

2 நிமிடங்கள்	சர்க்கரை நோய் வருவதற்கான காரணங்களை பற்றி கூறுதல்.	**சர்க்கரை நோய் வருவதற்க்கான காரணங்கள்** • பரம்பரையில் சர்க்கரை நோய் இருப்பவர்களுக்கு • ஏடை அதிகமாக இருப்பவர்கள் • இரத்தகொதிப்பு • கர்ப்ப காலத்தில் சர்க்கரை நோய் இருப்பவர்களுக்கு **சர்க்கரை நோயின் அறிகுறிகள்:** • அடிக்கடி தாகம் • அதிக பசி • மிக வேகமாக எடை குறைதல் • கண்பார்வை மங்குதல் • அதிகமாக சோர்வடைவது • வெட்டு காயம் / சிராய்ப்பு ஆகியவை ஆறுவதற்கு அதிக காலம் பிடித்தல் • பாதங்களில் உணர்ச்சி குறைவு அல்லது எரிச்சல்	விளக்குதல் மற்றும் கலந்துரையாடல்	கவனித்தல்

2 நிமிடங்கள்	சர்க்கரை நோயை கண்டறியும் சோதனை முறைகளை பற்றி கூறுதல்	**நீரிழிவு நோயினை உறுதி செய்யும் சோதனை முறைகள்** • உணவு அருந்துவதற்க்கு முன் இரத்தத்தில் சர்க்கரையின் அளவு • எதேச்சையான நிலையில் இரத்தத்தில் சர்க்கரையின் அளவு • உணவு அருந்திய 2 மணி நேரத்திற்கு பிறகு இரத்தத்தில் சர்க்கரையின் அளவு • சர்க்கரை நோய் தற்காலிகமானதா அல்லது நிரந்தரமானதா என உறுதி செய்யும் பரிசோதனை • சிறுநீர் பரிசோதனை • கண் பரிசோதனை • இதய சுருள் படம் • கண்காணிப்பு எடை • பல் பரிசோதனை • கால் பரிசோதனை	விளக்குதல் மற்றும் கலந்துரையாடல்	கவனித்தல்

10 நிமிடங்கள்	சர்க்கரை நோய்க்கான உணவு முறைகளை பற்றி கூறுதல்	**சிகிச்சை முறைகள்** 1. உணவு முறைகள் 2. உடற் பயிற்ச்சி 3. இன்சுலின் ஊசி 4. பாத பராமரிப்பு **உணவு முறைகள்** சர்க்கரை நோயாளிகள் சமச்சீரான உணவில் கவனம் செலுத்துவது அவசியம். புரதம் கார்போஹட்ரேட் குறைந்த அளவு கொழுப்பு வைட்டமின்கள் இவற்றை போதுமான அளவு சேர்த்து வருவதே சமச்சீரான உணவாகும் **சேர்க்க வேண்டிய உணவு வகைகள்** • தானிய வகைகள் மற்றும் பழங்கள் • பருப்பு வகைகள் மற்றும் பழங்கள் • பருப்பு வகைகள் • காய்கறி வகைகள்	விளக்குதல் மற்றும் கலந்துரையாடல	கவனித்தல்

		தானிய வகைகள் மற்றும் பழங்கள் தானிய வகையில் அரிசி, கேழ்வரகு, போன்ற தானியங்கள் பழங்களில் ஆப்பிள், ஆரஞ்சு, சாத்துகுடி, கொய்யா, பப்பாளி, நாவல்பழம் **பருப்பு வகைகள்** கடலை பருப்பு, உளுத்தம் பருப்பு, முளைகட்டிய பயிறு வகைகள் உணவில் சேர்த்து கொள்ள வேண்டும் **காய்கறி வகைகள்** சர்க்கரை நோயாளிசள் தினமும் உணவில் காய்கறிகள் அதிகம் சேர்த்து கொள்ள வேண்டும். **தவிர்க்க வேண்டிய பொருட்கள்** ➢ உருளை கிழங்கு ➢ சர்க்கரை ➢ தேன் ➢ ஆட்டிறச்சி ➢ கோழி இறச்சி	விளக்குதல் மற்றும் கலந்துரையாடல	

10 நிமிடங்கள	சர்க்கரை நோயளிக்கான உடற்பயிற்சி செய்யும் முறைகளை பற்றி கூறுதல்	➢ ஜாம் ➢ வெல்லம் ➢ நெய் ➢ வெண்ணெய் ➢ முட்டையின் மஞ்சள் கரு ➢ திராட்சை **2.உடற் பயிற்ச்சி** உடற் பயிற்ச்சி செய்வதன் மூலம் சர்க்கரை நோயை கட்டுபடுத்தலாம் மற்றும் உடலைஆரோக்கியமாகவும் வைத்திருக்கலாம் **உடற்பயிற்ச்சி செய்வதற்க்கான நோக்கம்:** 1. இரத்ததில் உள்ள அதிக சர்க்கரையின் அளவை கட்டுபடுத்துவது 2. இரத்த கொதிப்பை கட்டுபடுத்துவது. 3. உடல் பருமனை கட்டுபடுத்துவது. 4. மூட்டு வலியை கட்டுபடுத்துவது. 5. மன அழுத்தத்தை கட்டுபடுத்துவது	விளக்குதல் மற்றும் கலந்துரையாடல	கவனித்தல்

		உடற்பயிற்சி செய்வதற்க்கான முறைகள்: • காலை, மாலை சுமார் 30 நிமிடம் எளிய உடற்பயிற்சி செய்யலாம். • வேகமாக நடத்தல் • கால்களை மடக்காமல் 20 முறை கைகள் தரையில் தொடுமாறு குனிந்து நிமிர்தல் • கை ,கால், விரல்கள் ஒவ்வொன்றையும் முன் பின்னாக மடக்குதல் • யோகா பயிற்ச்சி • ஊடற் பயிற்ச்சி செய்வதற்க்கு முன் இரத்தத்தில் சர்க்கரையின் அளவினை பார்க்க வேண்டும் **பாத பராமரிப்பு** சர்க்கரை நோயாளிகளுக்கு பாத பராமரிப்பு மிகவும் அவசியம். ஏனெனில் பாத நோய்களை தடுப்பதற்க்காகவும் மற்றும் சர்க்கரை நோயினால் வரும் பின் விளைவுகளை தடுப்பதற்க்கும்	விளக்குதல் மற்றும் கலந்துரையாடல	

		கால் புண் ஏற்படுவதற்கான காரணங்கள்: 1. நரம்பு பாதிப்பு 2. புாதத்திற்கு குறைவான இரத்த ஒட்டம் செல்லுதல் 3. காலில் அடி படுவதினால் கால் புண் வரும **கால்களை பராமரிக்கும் முறைகள்:** • தினமும் பாதத்தை கவனித்தல் • விரல்களை பார்த்தல் மற்றும் சுத்தம் செய்தல் • கால்களை தினமும் மிதமான தண்ணீரில் கழுவுதல் • கால்களை கழுவும் முறைகள் • நகவெட்டியால் நகத்தை சரியான முறையில் வெட்டுதல் • கழுவிய பிறகு நன்கு துடைத்தல் • கால்களை கழுவிய பிறகு கண்ணாடியில் பார்த்தல் • கால் உறை மற்றும் கால் அணிகளை அணிந்துகொள்ளுதல்	விளக்குதல் மற்றும் கலந்துரையாடல	

10 நிமிடங்கள்	இன்சுலின் போடும் முறைகளை பற்றி கூறுதல்	4.**இன்சுலின் ஊசி போடுதல்** இன்சுலின்(Insulin) ஒரு புரதம் அல்லது பாலிபெப்டைடு. இதில் 51 அமினோ அமிலங்கள் அடங்கியுள்ளன. **இன்சுலினின் உடற்செயலியல் செயல்கள்** **இன்சுலின் இரத்தத்தின் சர்க்கரையை மூன்று வழிகளில் குறைக்கிறது.** **(அ)இது குளுக்கோசை, கிளைக்கோசனா மாற்றிக் கல்லீரல் மற்றும் தசைகளில் சேமிக்க உதவுகின்றது.** **(ஆ) திசுக்களில் குளுக்கோசு ஆக்சிகரணம் () அடைய உதவுகின்றது.** **(இ) குளுக்கோசு கொழுப்பாக மாற்றப்பட்டு அடிபோசு திசுக்களில் சேமிக்கப்படுவதற்கு உதவுகின்றது.**	விளக்குதல் மற்றும் கலந்துரையாடல	கவனித்தல்

		இன்சுலின் ஊசி போடும் முறைகள் • கையை நன்கு கழுவவேண்டும் • உணவு அருந்துவதற்கு அரை மணி நேரத்திற்கு முன் இன்சுலின் ஊசி போட வேண்டும். • இன்சுலின் ஊசி போடுவதற்க்கு முன்பு இன்சுலின் பாட்டிளை பார்த்தல் • பாட்டிலை நன்கு குளுக்கிய பிறகு மருந்தை எடுக்க வேண்டும் • எந்த இடத்தில் இன்சுலின் ஊசி போடவேண்டும் என தீர்மானிக்க வேண்டும் • இன்சுலின் ஊசி போடும் இடங்கள் • இன்சுலின் ஊசியை 90 டிகிரியில் வைத்து போடவேண்டும் • இன்சுலின் மருந்தை செலுத்திய பிறகு இன்சுலின் ஊசியை அதே இடத்தில் 5 நிமிடம் வைக்க வேண்டும்	விளக்குதல் மற்றும் கலந்துரையாடல	

		சர்க்கரை நோயாளிகளுக்கு வரும் பின் விளைவுகள் • இரத்த சர்க்கரை குறைவு • கரோனரி இருதய நோய் • நரம்புதளர்ச்சி • மூளையில் ஏற்படும் நோய் • கண் பார்வை குறைபாடு • இனப்பெருக்க திறனற்ற நிலை • கால் புண்	விளக்குதல் மற்றும் கலந்துரையாடல்	

முடிவுரை

இதுவரை நாம் சர்க்கரை நோய் என்றால் என்ன, சர்க்கரை நோயின் வகைகள், காரணங்கள், அறிகுறிகள், கண்டறியும் முறைகள், சிகிச்சை முறைகள் மற்றும் உணவு முறைகள், உடற் பயிற்ச்சி, பாத பராமரிப்பு, இன்சுலின் ஊசி போடும் முறைகள் பற்றி தெரிந்து சொண்டோம்.

- நன்றி